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Trust: A precondition for Successful Implementation of REDD Initiatives?

A study of local empowerment and community involvement in Papua Barat, Indonesia.

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Dedicated to my beloved grandfather:

Mr. Pravat Kumar Mukherjee
(9th March, 1930 – 31st December, 2003)

"The truth is rarely pure and never simple."
- Oscar Wilde

ABSTRACT

The purpose of this thesis is to discuss the issue of whether trust is a precondition for the successful implementation of sustainable REDD initiatives in Papua Barat, Indonesia. Research objectives have been to assess the forest dependency of the indigenous peoples of *Kampung* Mokwam and Manokwari *Utara* and how this dependency affects their choice of livelihoods. Involvement of governmental and nongovernmental organizations in the past and present has given an indication of the trust levels that prevail in the Papua Barat setting. The main objective has been to analyze how trust builds social capital, thus empowering indigenous communities to actively participate in collective action through self-governance to enhance common-pool resource management.

The theoretical basis of this research has had a focus on Elinor Ostrom´s (1990) work on common-pool resource management with a basis on Hardin´s (1968) Tragedy of the Commons. Coleman´s (1988) work on social capital and Kristiansen´s (2004) model on social networks have also contributed to a better understanding of common-pool resource management implementation in Papua Barat. Theories on empowerment, self-governance, and good governance have aided in strengthening the theoretical framework for the purpose of analysis. The contextual information on the history of Indonesia and Papua Barat in addition to the presentation of the concept of REDD have also been of use in analyzing trust as a precondition for successful implementation of sustainable REDD initiatives.

The methodology used for the purpose of research was of a qualitative nature whereby research was conducted through interviews and focus group discussions. Findings of the research show that livelihoods of the two research areas reflect levels of indigenous forest dependency and that both indigenous communities actively engage in small-scale deforestation. However, in being aware of the environmental effects caused by deforestation, the indigenous peoples are willing to engage in REDD initiatives with the assistance of foreign organizations, as the levels of distrust between these peoples, the government, and nongovernmental organizations is high, thus causing a social trap whereby all parts are skeptical of engaging in collective action with one another. The social trap has its roots in the history of the province, the lack of infrastructure, the blatant and apparent corruption issues prevailing in the archipelago, and finally, a general lack of human capital and knowledge in the setting of Papua Barat. Thus, trust is, without doubt, a vital precondition for the successful implementation of REDD initiatives through empowerment and social capital build-up in rural Papua Barat, Indonesia.

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Declaration by Candidate

I, Tanushri Banerjee-Wøien, hereby declare that the thesis: **TRUST: A PRECONDITION FOR SUCCESSFUL IMPLEMENTATION OF REDD INITIATIVES? – A study of local empowerment and community involvement in Papua Barat, Indonesia**; has not been submitted to any other universities than University of Agder for any type of academic degree.

_____   <u>31st May 2010</u>
            Tanushri Banerjee-Wøien   Date

TABLE OF CONTENTS

LIST OF FIGURES, PHOTOS, AND TABLES

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LIST OF ABBREVIATIONS

AFOLU: Agriculture, Forestry and Other Land Use
CDM : Clean Development Mechanism
CER : Emission Reduction Credits
CIFOR : Center for International Forestry Research
CO₂ : Carbon dioxide
CPR : Common-pool Resources
DA-REDD : Demonstration Activities – REDD
DPRP : Lower House consisting of Politca-Party Reprsentatives
ERUs : Emission Reduction Units
FCPF : Forest Carbon Partnership Facility
GHGs : Greenhouse Gases
HPK : *Hutan Produksi Konversi*
HPL : *Hutan Produksi Lain*
IDR : Indonesian Rupiah
INCAS : Indonesia National Carbon Accounting System
IPCC : The Intergovernmental Panel on Climate Change
IPK-MA : *Ijin Pemungutan Kayu oleh Masyarakat Adat* – Timber Logging Permit for Customary Communies
JI : Joint Implementation
Kopermas : Korperasi Peran Serta Masyarakat – Community Cooperative
LMHA : *Lembaga Masyarakat Hukum Adat* – Customary Community Organization
LULUF :Land Use, Land Use Changes and Forestry
MDGs – Millennium Development Goals
MRP : Indigenous Upper House
MRV : Monitoring, Reporting, & Verification; REDD system for crediting
NGO : Nongovernmental Organization
PES : Payments for Environmental Services
PTA : *Pembela Tanah Air*, Indonesian Auxiliary Army
PPKI : *Panitia Persiapan Kemerdekaan Indonesia,* Preparatory Committee for Indonesian Independence
PPPK : *Program Perencanaan Potensi Kehutanani* – Program of Planning of the Potential of Forests
PRODES : *Projeto Monitoramento da Floresta Amazônica Brasileira por Satélite* – Sampling Approaches used in the Brazilian Amazonian Rainforest
REDD : Reducing Emissions from Deforestation & Forest Degradation
REDDI : REDD Indonesia

REDD+ : Reducing Emissions from Deforestation & Forest Degradation, and enhancing forest carbon stocks in developing countries
REL : Reference Emissions Level
UGM : Universitas Gadja Mada – Yogyakarta
UN : United Nations
UNDP : United Nations Development Programme
UNEP : United Nations Environment Programme
UNESCAP – United Nations Economic and Social Commission for Asia and the Pacific
UNFCCC : United Nations Framework Convention on Climate Change
UNIPA : *Universitas Negeri Papua Barat* – State University of Papua Barat
UNREDD : United Nations REDD
WWF – World Wildlife Fund
YBLBC – *Yayasan Bina Lestari Bumi Cendrawasih* – Local NGO in Pegunungan Arfak

INDONESIAN TERMINOLOGY

Desa (Kampung) – Village Level
Distrik – Sub-district Level
Front Nasional Pembebasan Irian Barat - National Front for the Liberation of West Irian
Hak Ulayat – Communities´ usufruct land rights
IPK-MA – Ijin Pemungutan Kayu oleh Masyarakat Adat – Timber Logging Permit for Customary Communities
Kabupaten – District Level
Kampung (Desa) – Village/Local Level
Kepala Burung – The Peninsula known as '*The Bird´s Head*' on the island of New Guinea (also known as the Doberai or Vegelkop Peninsula)
Koti: Komando Operasi Tertinggi – Supreme Operations Command created for the fight to win sovereignty over Irian Jaya
Kopermas – Korperasi Peran Serta Masyarakat – Community Cooperative
LMHA – Lembaga Masyarakat Hukum Adat – Customary Community Organization
Mansinam – Mansinam annual celebrations are held on the island of Mansinam situated off the coast of Manokwari City and mark the arrival of the first German missionaries in Papua Barat
Masyarakat Adat – Customary Communities
Orde Baru – New Order – Indonesia under the rule of Suharto (1965-1998)
OPM – Organisasi Papua Barat Merdeka – Free Papua Barat Organization
Otonomi Daerah – Regional Autonomy
Papua Barat – West Papua Barat
Pancasila – A set of five national principles shared by all Indonesians despite their ethnicity or political beliefs.
Pegunungan Arfak – Arfak Mountain Region, *Kabupaten* Manokwari
PETA – Pembela Tanah Air – Indonesian Auxiliary Army
PPKI – Paniia Persiapan Kemerdekaan Indonesia – Preparatory Committee for Indonesian Independence
PPPK – Program Perencanaan Potensi Kehutanan – Program of Planning Potential Forests
Provinsi – Provincial Level
Terima Kasih – Thank you
Transmigrasi – The Indonesian Transmigration Programme
YBLBC – Yayasan Bina Lestari Bumi Cendrawasih – Local NGO Mokwam

CHAPTER I

Introduction

Papua Barat, Indonesia´s east-most province is host to extended hectares of rainforest and home to the archipelago´s most diverse population of indigenous ethnic tribes. Papua Barat nests a variety of natural resources and the Indonesian government faces the challenge of generating national revenue without further exploitation of the regions rainforests. The international pressure on reducing its emissions of Greenhouse Gases, GHGs, is a result of the nations rank in third place (after China and the United States) with regards to contribution of CO_2 emissions. Indonesia, thus, needs to acquire a better image both for political and financial reasons. Unfortunately, 'the political history of Indonesia, after independence, has seen its leaders stressing unity in the course of their policies at the expense of diversity' (Amal 1992: vi). Examples of such expenses are numerous in the setting of Papua Barat.

The Intergovernmental Panel on Climate Change (IPCC) estimates that approximately 20% of the overall GHGs that enter the atmosphere are directly cause by deforestation (UNDP 2009) and that an immediate requirement in reducing land degradation and deforestation is necessary in order to reduce further emissions. Reducing Emissions from Deforestation & Forest Degradation (REDD) is a sustainable development programme that gives hope for rainforest conservation. The immediate goal has been to 'assess whether carefully structured payments and capacity support can create the incentives to ensure actual, lasting, achievable, reliable and measurable emission reductions while maintaining and improving the other ecosystem services that forests provide' (UNDP 2009:1) A vital aspect of a successful REDD programme is to incorporate local participation and ensure that structured payments reach those that actively carry out conservation and monitoring. The programme, however, has certain factors of risk and 'there are doubts about the ability to deliver actual, lasting, achievable, reliable, and measureable emission reductions' (FAO 2009:1).

The mere size of the Indonesian archipelago, without doubt, presents a vast array of traditions, cultures, and social capital; and in turn, differences of opinion and governance challenges. 'Since Papua Barats annexation by Indonesia in 1969, many among the Papua Barat elite have indicated a preference for the formation of an independent Papua Barat state' (Resosudarmo *et al.* 2009:23). The ever-prevailing conflict and tension between Papua Barats and the Indonesian government was instigated by a lack of trust and intention of exploitation interplay, and is still the case, by large. 'Economic development has been uneven in Papua Barat, and poverty in the region remains high by Indonesian (though not necessarily South Pacific) standards' (Resosudarmo *et al.* 2009:21). The prevailing poverty affects mainly indigenous peoples throughout the province, and governmental income generation by natural resource exploitation – initiating deforestation and land degradation – rarely reaches those that need it the most. A result of this poverty is deforestation and land degradation also at a basic local level. Private farms are established by the clearance of forest area and support local families with produce which may be consumed and/or sold in order to generate income. The result of deforestation actions carried out by both the government and the indigenous peoples of Papua Barat are a direct threat to the environment.

Due to the alarming rates of deforestation and land degradation and Indonesia´s commitment to REDD, the nation can no longer afford to ignore the social capital issue and potential of the indigenous peoples with regards to forest conservation. 'Indonesia will have to address issues related to the rights and responsibilities of local communities, land tenure insecurity faced by smallholders and forest rent enjoyed by large landholders (…) to ensure equal distribution of forests and carbon benefits' (Murdiyarso 2009:33). The advantages of common property regimes will benefit the indigenous peoples by empowering them to actively participate in REDD initiatives around Papua Barat. 'Strengthening tenure systems and clarifying property rights can improve forest governance and raise the incomes of local communities' (Murdiyarso 2009:33), thus addressing issues of both poverty and environmental degradation.

The main objective of this research is to discuss whether trust is a precondition for the empowerment and involvement of Papua Barat people to actively participate in REDD through increased social capital. Qualitative research is conducted amongst the Hatam-Moulei and Arfak indigenous peoples of *Kabupaten* Manokwari, in the form of interviews and focus group discussions. The research questions that were the focus of the research are presented below:

1. To what extent are the Hatam-Moulei and Arfak indigenous peoples of Manokwari dependent on the rainforest and how is this reflected in their livelihoods?
2. How do the Hatam-Moulei and Arfak indigenous peoples contribute to deforestation and forest degradation and are they aware of the impacts of such activities?
3. How have these peoples responded to nongovernmental developmental programmes in the past?
4. How have issues with regards to distrust between indigenous peoples and government institutions and nongovernmental organizations contributed to the existing social trap in Papua Barat?
5. How can REDD initiatives be administered in Papua Barat building social capital through empowerment of indigenous peoples whilst ensuring collaboration between these groups, the government, and nongovernmental organizations?

The thesis is presented in eight chapters. The introduction is followed by a contextual description and a brief historical timeline of Indonesia in Chapter two, where focus is given to the issue of trust within the nation through the years. Chapter three highlights the concept of REDD and Indonesia´s direct involvement in reducing emissions caused by deforestation and forest degradation. Chapter four introduces theories on common-pool resource management, social capital, trust and empowerment. Chapter five presents the research methodology of the thesis, and Chapter six the empirical findings from the data collected in the field. Chapter seven is dedicated to the analysis of the empirical findings and relating them to the chosen theoretical frameworks. Chapter eight presents conclusions and recommendations.

CHAPTER II

Contextual Description

The purpose of this chapter is to present a contextual description of the study area and it is divided into four sections. Section one begins with a brief country profile of Indonesia, highlighting important periods in its history with relevance to political and economic struggles including state sovereignty over the province of Papua Barat. The section also highlights aspects of the nations history that are causes of discussion within political and economic development in Indonesia today. Section two describes the setting of Papua Barat with a brief history that focuses on its integration to Indonesia. Thereafter the theme of indigenous peoples, infrastructure, and development in Papua Barat are presented. Section three draws attention to Indonesia and the subject of forest ownership. Finally, Section four describes the two study areas where research was conducted for the purpose of data collection for this thesis.

II.I Indonesia

Located in Southeastern Asia, the Republic of Indonesia is a vast country. The world´s largest archipelago with more than 17,000 islands, Indonesia covers approximately 1.91 million square kilometers. The equatorial nation is the world's third-largest democracy and holds the reputation of being the fourth most populated nation, with approximately 232 million inhabitants (Statistics Indonesia 2010). The nation celebrated its first free parliamentary elections in 1999, after numerous decades of repressive rule (CIA 2009). Thus, Indonesia is a recently democratized state.

Figure I – Map of Indonesia (Source: CIA 2009)

Ethnic diversity is an obvious characteristic of Indonesia when one considers the immense size of the nation. Home to more than 300 ethnic groups, the vast diversity also points out the differences in the people of Indonesia. The native population of the eastern-most provinces of Indonesia is represented by Melanesians and there are also Indonesians that belong to a minority group that originated form China and India. The differences in the people are not only represented through ethnicity, but also in religious values. 'The spread of Islam is one of the most significant processes of Indonesian history' (Ricklefs 1993:3). Thus, the majority of Indonesians are Muslim. However, Christians, Hindus, and populations that believe in the craft of nature also represent religious minorities in Indonesia.

In addition to a varying landscape, the nation also has approximately '100 million hectares of tropical forests, second only to the vast expanses of the Amazon and the Congo Basin' (Gregersen *et al.* 2004:49). It is said that 'the low lands of Sumatra and Kalimantan are among the most biologically rich and most diverse ecosystem on earth' (Gregersen *et al.* 2004:49). Government figures reveal that approximately 33 million hectares are protection forests and that production forests comprise approximately 58 million hectares (Gregersen *et al.* 2004).

Years of colonization by the Dutch, invasion by the Japanese, and decades of hostility left the nations infrastructure in a poor condition. Social security is lacking due to poverty, terrorism,

accounts of human rights violations carried out by the police and military, and numerous other issues. In addition, unfortunately, Indonesia´s political backbone cannot be denoted as being reliable; 'Indonesia is still one of the world´s most corrupt countries' (Long 2009:3).

The Path from Colonization to Democratization: A Political & Economic History

From 1670 to the 1900s, the Dutch colonists brought the whole of Indonesia under one government as the Dutch East Indies. The Dutch, similar to other colonizers of the world, 'intended to control Indonesia for their own interests' (Ricklefs 1993:201).

'From the late 1920s, the most dynamic political thinker in the colony was Soekarno' (Cribb & Brown 1997:12). Already in 1928, an organized youth conference pledges to work towards the goal of *one nation, one language, one people* for Indonesia (BBC 2010). Soekarno was not educated abroad, like some other political thinkers, and therefore possessed an ideology that evolved into an intertwined concept that took into consideration all major streams of political thoughts in the emerging Indonesian movement. In later years of the 1920s and through the 1930s, Indonesian nationalists attempted a variety of strategies to overcome the Dutch, who had by the 20th Century seized to be a world power. 'Of all the nationalist leaders Soekarno had perhaps the widest following and Muslim political groups were (…) the most closely enmeshed with peasant society, at least in some regions' (Cribb & Brown 1997:13). However, despite the nationalist political groups and their attempts to overcome the colonists, these attempts were not successful and it was not until 1942 that the Dutch colonial era finally came to an end due to Japanese invasion.

The outbreak of the Second World War in Asia brought to Indonesia the destruction of the centuries long Dutch colony. 'The three and a half years of Japanese occupation (1942-1945) constitute one of the most crucial episodes of Indonesian history' (Ricklefs 1993:199). The Japanese had decided to control Indonesia through mobilization. During their occupation, the Japanese trained and armed the younger generations on the islands of Java and Sumatra. Older leaders were given opportunities to reach out to the masses. 'Throughout the archipelago (the Japanese) politicized Indonesians down to the village level both by intention and by subjecting Indonesia to the most oppressive and devastating colonial regime in its history' (Ricklefs 1993:199). Villages were shaken out of their laid-back colonial lethargic states and political isolation. The set up of an Indonesian auxiliary army already in October 1943 – named the *Pembela Tanah Air* (PETA) in Java and the Giyugun in Sumatra were part of the mobilization programme (Cribb & Brown 1997).

The Japanese had separated the archipelago by dividing it into three regions. Whilst Sumatra was placed under the 25th Army, Java and Madura were under the 16th Army; however, both were under the 7th Army that had its headquarters in Singapore. Kalimantan and East Indonesia (including the province of Papua Barat) were considered one region and controlled by the Japanese navy. Political policies differed greatly in these three regions and Java, in general, was perceived as the most politically advanced. Being least economically important, Java´s main resource was people. Being the most populated island of the archipelago, Java received political policies through Japanese rule that stimulated nationalism at a much larger level than in the other two regions. Thus, 'the greater political sophistication of Java over other areas was thereby enhanced' (Ricklefs 1993:199). Due to this significant political development in Java, the island also received greater scholarly attention than the other islands of the archipelago. This increased the level of nationalism amongst the inhabitants of Java. Sumatra was important for its strategic resources and when Japan was on the brink of defeat,

nationalist ideology was presented there. However, 'the area under naval control was regarded as politically primitive and economically essential to Japan (and) was governed in the most repressive manner of all' (Ricklefs 1993:199). Already during this time in the history of Indonesia, the Eastern Indonesian islands were referred to as primitive and given less attention to with regards to political and economic development. Japanese policy in Indonesia was centered about two priorities, i.e. to dissolve Western influences and to mobilize Indonesians towards the interests of Japanese victory of the Second World War, and the island of Java, was the political administrative island.

One of the primary aims of the Japanese was to restructure and redirect the Indonesian economy in order to support Japan´s war effort and its plans for long-term economic domination of East and Southeast Asia. Measures that were taken to do so included the introduction of new regulations to control and redirect Indonesia´s main products of tobacco and rubber. A combination of these regulations and other tactics caused chaos and hardship for Indonesians and made the worst years of the Depression seem mild (Ricklefs 1993). The hardship for 'tens of thousands of Indonesian laborers, receiving minimal pay and suffering meager nutrition, brutal treatment and appalling health conditions, working for the Japanese on military and economic projects which often turned out to be misguided or pointless' (Cribb & Brown 1997:14). The military government contributed to rising inflation from 1943 and onwards by flooding the nation with occupation currency. Unfortunately, 'by the middle of 1945 this currency was worth about 2.3 per cent of its face value' (Ricklefs 1993:201). Compulsory food requisitioning led to widespread famine in the years of 1944 and 1945, increasing mortality rates and reduced fertility. Political, military and economic aims could be described as panicked efforts in winning the War at the expense of the Indonesian population.

As the situation of the war turned around, the Japanese authorities 'began a somewhat hasty programme to prepare Indonesia for the *puppet independence* which they had already granted to Burma and the Philippines' (Cribb & Brown 1997:15). They hoped that an independent Indonesia would hamper Allied advances. The Japanese initiated the independence process through PETA and Giyugun and selected 'Soekarno and Hatta, prominent nationalists whom they had already used for general propaganda purposes, to lead the independence process' (Cribb & Brown 1997:15). They saw the Japanese as a so-called *necessary temporary evil* on the path to independence. Soekarno and Hatta led a march towards Japanese-initiated independence from May 1945 and hoped to gain it before the expected Allied victory.

However, despite the political struggle for a free Indonesia, the vagueness of the ideology of a united nation, 'debates in the Preparatory Committee for Indonesian Independence (*Panitia Persiapan Kemerdekaan Indonesia: PPKI*) on the basis of the state led to stalemate over the desirable constitutional proportion of Islam' (Cribb & Brown 1997:15). The Jakarta Charter was an agreement whereby nationalists finalized that Indonesia ought not to be an Islamic state.

'Soekarno made a major contribution to smoothing over differences by proposing as the basis of the state a set of five principles which he called the Pancasila and which, he said, were shared by all Indonesians, regardless of their ethnicity or political beliefs. These principles, enshrined in the preamble to the new constitution, were as follows:

- *Belief in God,*
- *National Unity,*
- *Humanitarianism,*
- *People´s Sovereignty, and*

- *Social Justice and Prosperity'* (Cribb & Brown 1997:15).

Although Soekarno´s *Pancasila* needed amplifying, the struggle towards independence at this time was more important than defining it. In finally losing the Second World War and surrendering in August 1945, Japanese rule was no longer a threat to Indonesian nationalists. After intense discussions (…) following Japanese surrender, Soekarno and Hatta agreed to declare independence in a brief ceremony in Jakarta on the 17th August 1945 (Cribb & Brown 1997).

However, in the period after this victory, the leaders of Indonesia would be overworked with two major aspects of actually being independent. The first aspect was to address basic questions and concerns of the people of the nation with regards to national identity and political form. Political nationalists had the task of gaining the trust of the Indonesian people, not only in Java but also across the archipelago. The second aspect of independence was destined to be the four-year struggle of gaining Dutch recognition as an independent state. Unfortunately, 'during this time, the Dutch reconquered large tracts of the country in an intermittent series of campaigns between longer periods of fractious negotiation and uneasy ceasefire' (Cribb & Brown 1997:17). Due to international pressure and an unmanageable guerrilla resistance in the archipelago, 'in 1949 the Netherlands formally transferred sovereignty over Indonesia, excluding Irian Jaya' (Ricklefs 1993:232).

These four years of warfare and negotiation awakened strong nationalist bonds between the population of the larger, politically active islands of Java and Sumatra, which gave birth to an enduring pride. Popular involvement in the resistance established the firm principle of mass political participation that underpinned Indonesian politics for the next two decades (Cribb & Brown 1997). However, as states the unwritten law of positive and negative aspects of all things, there were also downsides to this struggle. The war of independence left an unfortunate 'legacy of political bitterness within what was once, for all its divisions, a single nationalist movement, reshaping the alignment of political forces and creating deep fractures between former political allies and associates' (Cribb & Brown 1997:17). The struggle left numerous domestic political issues unsolved.

Although Indonesia had successfully managed to gain independence as its own state and not the *puppet state* that Japan had planned prior to their defeat in the Second World War, the nation could not claim that struggle was over. In being a new independent state, the leaders of the Republic faced two major tasks. Firstly, Indonesia needed international recognition as an independent state. In building up the nation, the leaders needed to prove itself to the international political arena. Secondly, 'neither the ideological character of the state nor the status of its various minorities was decided' (Cribb & Brown 1997:18). With this issue at hand, the leaders had to form policies to tackle the problems of colonialism and deliver the fruits of independence to its people. (Cribb & Brown 1997)

Soekarno: Guided Democracy and Sovereignty over Irian Jaya

Soekarno´s presidency lasted from 1945 to 1967 where he and fellow nationalists took the challenge of building a nation in the turbulent aftermath of independence. 'Soekarno cared little for such a role and found himself increasingly in agreement (…) that winning sovereignty over Irian Jaya should not be given low priority' (Ricklefs 1993:243). Soekarno´s colleague, Hatta, as vice-president used his influence informally over government policies.

Finally, a third man on the team, Sjahrir, was a close colleague of Hatta and took the role of a more demonstrative politician within the new independent state. The trio, each man with his own strengths within politics, represented the nation at a domestic and international level. 'Sjahrir managed to persuade the Western world that Indonesia could and should run its own affairs' (Cribb & Brown 1997:20).

In his years of rule, the years of 1950-1957 saw the fall of the nation. The fall was caused by public opinions on how the nation was structured and governed and not the fact that it was a single nation. That did not seem to be the problem, as several elements clearly showed an Indonesian sense of identity:

- *'The fact of political independence,*
- *The rapid spread of the Indonesian language,*
- *The discrediting of regional political identities by the Dutch attempt at federalism during the Revolution,*
- *The growth of more cosmopolitan urban centers,*
- *Sukarno´s constant hammering at the theme of national unity,*
- *The agitation over Irian Jaya,*
- *The political Parties´ insistence upon their role as national organizations,*
- *The symbolism of the national elections of 1955,*
- *The military´s dedication to the spirit of the Revolution'* (Ricklefs 1993:256).

And although the nation fell, it became united. In the midst of the crisis, Soekarno needed to please the people and thus adopted a form of government that he called *guided democracy* (Cribb & Brown 1997). Unfortunately this fluid system kept changing in the most disturbed period of Indonesian history after the revolution. And 'although Soekarno had a vision of his own future, he had none (…) for the future of his nation and its people, thus the promise of guided democracy was an empty one' (Ricklefs 1993:257).

Attempts of assassinating Soekarno in 1957 increased political tension. Another reason for the increase in political tension was that the United Nations (UN) had failed to pass a resolution that called for the Dutch to negotiate the future of Irian Jaya with Indonesia. Unfortunately, the political tension was accompanied by anti-Dutch movements that affected the economy and in December 1957, 46 000 Dutch citizens were expelled from Indonesia (Ricklefs 1993). The economic enterprises of these citizens were taken over by the army, but mismanagement and inefficiency caused corruption to soar.

In Soekarno´s continuing efforts to gain control over Irian Jaya, the *Koti: Komando Operasi Tertinggi* (a new Supreme Operations Command) was established in 1961 and Major-General Soeharto was to be in charge of the fighting in the struggle towards sovereignty of Irian Jaya. In January 1962, the Dutch finally stated that they were willing to negotiate, but the negotiations were in vain. In August of 1962, negotiations with regards to Irian Jaya were finally settled. 'The Dutch agreed to transfer the territory in October 1962 to an interim United Nations administration which would turn it over to Indonesia by May 1963 and an exodus of Dutch citizens from Irian Jaya began immediately' (Ricklefs 1993:271).

Unfortunately, the victory of Irian Jaya prevailed in one of the most uncertain periods of guided democracy. The nation was pushed into chaos due to the fight for Irian Jaya and returning to stability did not seem attractive. The army feared cuts in military budgets and suspected that lifted martial law would block its growth. In addition, 'Soekarno feared that the

8

congenial mass emotionalism of the Irian Jaya campaign would come to an end, derailing his return to the revolutionary spirit' (Ricklefs 1993:271).

In 1965, after a series of abductions, coups, and deaths, Soekarno´s period of Presidency had come to an end. Soekarno´s so-called *experimental political system* had produced crisis. Soekarno´s period of leadership had been challenging, as is any political setting after independence. However, numerous observers have seen tragedy in Soekarno´s time. The most tragic of all tragedies during his rule was the tragedy of Soekarno himself; 'the man who outlived his time and used his popular support to maintain a regime of extravagant corruption and hypocrisy' (Ricklefs 1993:271).

Soeharto´s *Orde Baru* (1965-1998)

After Soeharto overthrew Soekarno, he established a period of rule that is known as *ordre baru* (the New Order). 'By the beginning of 1976 the new order had achieved a stable, definable form through a regime resting upon the tight centralization of power in the hands of President Soeharto and a circle of loyal followers' (Ricklefs 1993:302). Educational welfare and economic successes were created by Soeharto´s *orde baru* and these years of rule are still remembered for economic development today.

Unfortunately, whilst the new order did bring economic development to the nation, tragedy still prevailed. Political stability was something that Indonesia could not yet boast of. 'Political expression was repressed by physical violence, arrests and the banning of publications or by subtle threats of such action' (Ricklefs 1993:302). Under Soeharto´s rule, the military took the main decisions, but did make the effort of sharing economic decision-making with other parties. Bureaucracy within the administration of the country prevailed and political parties were rendered incompetent thus, impotent to change the political order.

'The failure of *Panasila* Democracy to encompass all Indonesians was also evident in the government´s continuing reliance on political repression and manipulation' (Cribb & Brown 1997:146). During Soeharto´s regime, there were numerous social changes being undergone, especially in rural areas. This is due to the fact that rural societies of Indonesia have never been static institutions and change is a constant part of village life (Cribb & Brown 1997). Greater change in rural Indonesian society was seen during *orde baru* and was ' a function largely of the government´s greater willingness to intervene in rural life, and of its greater capacity to do so' (Cribb & Brown 1997:148). Unfortunately, it was mainly the richer farmers and rural residents that were able to participate in economic social changes of rural life brought about by the *orde baru*. Social changes in rural areas were also felt due to larger migration of rural residents to urban areas for the purpose of education of young family members. Unfortunately, developmental contributions of the kinds mentioned above led to a rapid increase in the rate of corrosion of long-established social and moral ties that bound agricultural communities together (Cribb & Brown 1997). The deteriorating ties were being replaced by ones that were based on economic wealth and/or with connections with the central government. This affected the levels of trust within rural communities, as those members of the communities with stronger social networks were those that faired well from *orde baru*.

The changes in rural Indonesia under the *orde baru* are complemented by dramatic economic and social changes in urban areas that brought about political awareness amongst the younger generations of Indonesia. 'The growing sophistication of business, industry and government

has demanded an increasingly skilled workforce at managerial, technical, and manual levels' (Cribb & Brown 1997:149). The boom in the educational sector helped to trigger the growth of nationalism through higher levels of literacy. 'The strongest impression made by the *orde baru* of President Soeharto as the 1990s opened was of its durability; there were grounds for thinking that its political, economic and social structures were so deeply rooted that they could survive even the retirement or death of the President' (Ricklefs 1993:309). Soeharto´s regime perhaps created a middle class that will demand more democratic involvement within state affairs, an end to corruption, and a more just society.

Decentralization since 1999

The last decade or so in Indonesia has seen numerous shifts in Presidencies as well as nationwide efforts of decentralization. After Soeharto´s overthrow, Habibie took over Presidency in 1998. Already in 1999, Abdurraham Wahid took over the role as nation´s President. The Wahid administration was dismissed by the Parliament due to embezzlement and corruption charges and replaced by President Sukarnoputri. This political instability was dealt with through constitutional changes in August 2002 where voters, for the first time, would be able to elect a President and vice president. Elections were held in October 2004 at the Parliamentary and local levels and Susilo Bambang Yudhoyono was sworn in as the sixth President of Indonesia. Yudhoyono was re-elected for a second term in 2009 and is the current President of Indonesia.

Decentralization in Indonesia was a transformation of the Indonesian political system after the downfall of former President Soeharto in May 1998. It included redefining the relationship between the central government and governmental bodies at the provincial and local levels. 'While Indonesian political rhetoric had always supported the right of the regions for *otonomi daerah* (regional autonomy), the passing of Law No. 22/1999 on Regional Governance, and Law No. 25/1999 on Fiscal Balance Between the Centre and the Regions transformed the concept of decentralization and regional autonomy into reality' (Embassy of Indonesia Ottawa 2010). The intention of decentralization was to allow provinces to make important decisions with regards to economic and social development. 'Decentralization has been more extensive in Papua Barat than in any other province in Indonesia (or almost anywhere else in the developing world)' (Resosudarmo *et al.* 2009:59) and may be looked upon as a golden opportunity for development in the province that has had great historical implications for the nation of Indonesia.

II.II Eastern-most Indonesia: Papua Barat

The provinces of Papua and Papua Barat were formerly one province under the names of Netherlands New Guinea, Western New Guinea, Irian Jaya, West Irian and finally Papua Barat. The province of Papua Barat is today divided into two provinces, Papua Barat and Papua Barat, and is the eastern-most part of Indonesia. Papua Barat is the 'western half of the island of New Guinea' (Free West Papua Barat 2009:1). Positioned at only 250 kilometers north of Australia, the area is mostly covered by impenetrable rainforest and offers 'diversity in lifestyle and culture of the indigenous people' (Vaisutis *et al.* 2007:793) and an abundance of natural resources. Papua Barat hosts numerous wildlife species and is home to numerous species of plants and trees.

Figure II – Map of Papua Barat   (Source: Google 2010)

A Brief History of Papua Barat

What is known as the eastern-most province of Indonesia today, the province of Papua Barat was known as Irian Jaya (West New Guinea) in contemporary Indonesia. 'It was the last area to fall under Dutch jurisdiction and in 1828 Fort Du Bus was established at what is now Lobo' (Ricklefs 1993:137). The reason for this establishment was primarily in order to prevent other nations to gain power through settlements. It did not take long for the Dutch to conclude that there was nothing attractive about Irian Jaya. This was a vast remote island that was populated by bands of Stone Age peoples is what the Dutch claimed. In addition, Fort Du Bus being located in a malarial region claimed great tolls of men and fiscal resources. Due to this, Irian Jaya was abandoned in 1836 and was 'in fact only brought under permanent Dutch occupation after 1898, especially in the period 1919-28' (Ricklefs 1993:37). At a later stage, Irian Jaya was used to build a prison for the imprisonment of criminals from other islands of the archipelago (Ricklefs 1993).

Although the Dutch transferred sovereignty to Indonesia in 1949, Irian Jaya was not a part of that transfer. Irian Jaya was to have its own fate. Soekarno´s efforts to gain sovereignty over the region lead to diplomatic efforts with the Dutch and the international community. 'Negotiations with the Dutch resulted in a protocol of August 1954 which envisaged the abolition of the Netherlands-Indonesian Union' (Ricklefs 1993:248). However, there was unfortunately no progress on the Irian Jaya issue and the United Nations did not grant a moderate resolution. By 1956 relations between Indonesia and the Netherlands had continued to worsen and this affected the negotiations of Dutch surrender of Irian Jaya to Indonesian control. In 1957, Soekarno had warned the international community that drastic measures

would be taken if negotiations between the Netherlands and Indonesia did not take place. The UN failed to pass a resolution and this caused widespread anti-Dutch radicalism encouraged by Soekarno himself. Gaining sovereignty over Irian Jaya was so important to him that in January 1958, the Indonesian army set up *Front Nasional Pembebasan Irian Barat* (a National Front for the Liberation of West Irian) based upon army-civilian cooperation bodies (Ricklefs 1993). However, the political parties did not deem this necessary and managed to obstruct its growth. Tensions with regards to state sovereignty over Irian Jaya continued and in 1961, Soekarno established and was the commander for *Koti: Komando Operasi Tertinggi*.

Finally, after many years of struggle, Indonesia gained control over Irian Jaya in 1962, however, with strings attached. 'Before the end of 1969 Jakarta would hold an *act of free choice* in Irian Jaya to see whether its people wished to remain within Indonesia' (Ricklefs 1993:271) or become its own state.

In 1969 Indonesia incorporated Irian Jaya as its twenty-sixth province. 'This followed an *act of free choice* as called for in the United Nations sponsored transfer arrangements, the outcome of which was never in doubt' (Ricklefs 1993:297). All 1022 Irianese leaders voted for incorporation of Irian Jaya. Together with the new province, Jakarta acquired numerous cultural and administrative challenges that still persist today. An additional issue was also that of security; the resistance movement called *Organisasi Papua Barat Merdeka* (OPM – Free Papua Barat Organization) is a constant form of resistance against the Indonesian government. 'Jakarta´s integration of Irian Jaya into the nation´s provincial structure meant continuing small-scale resistance from OPM guerillas and both local and international protest at the impact of economic development and transmigration by other Indonesians into that territory' (Ricklefs 1993:309).

The Indonesian Transmigration Programme, *Transmigrasi*, came about due to the overcrowding of islands such as Java and Bali. The aim of the programme is to reduce the population on Java and Bali by inducing migration to the lesser-populated islands of the archipelago. Some of the migrants that are moved are landless peasants and others are peoples in need of an economic future. Yet others are civil servants and military officials. The purpose of these migrants is to assist in the building of social infrastructures of the outer islands of Papua Barat, Kalimantan, Sumatra, and Sulawesi.
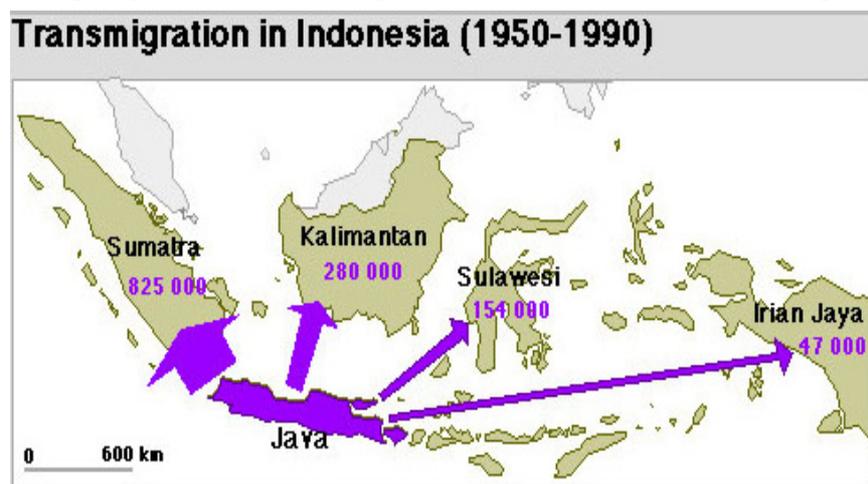
Figure III – Map of Transmigration in Indonesia
(Source: Université LAVAL 1997)

In feeling the burden of over-population, the Indonesian government´s policy of *transmigrasi* has been a somewhat present-minded solution. In the past two decades, the government has moved approximately six million people from the over-crowded central islands with the goal of developing infrastructure, schools, and hospitals in order to make *use* of the land in the outer islands (Mongabay 2010). In thinking further than the current issues related to overpopulation and relocation, the outer lands are the areas of Indonesia that are covered by the majority of southeast Asia´s remaining primary forests (Mongabay 2010). As more people are relocated to the outer islands, more trees are felled.

The *transmigrasi* programme has also been criticized as being a political scheme whereby the nations political leaders relocate Javanese civil servants to outer islands in order to gain political control over these islands. Military bases and over-staffed police offices in the city of Manokwari in Papua Barat, for example, is only one example of such evidence. The general opinion of native inhabitants of Papua Barat, for example, is that Papua Barat is still a colonized island, however not by the Dutch but by the Indonesians. In addition to political concerns, numerous of the transmigrant agricultural schemes fail shortly after their establishment as many colonists coming from the central islands lack basic knowledge with regards to cultivation techniques (Mongabay 2010). This is yet another example of the negative impacts of *transmigrasi*.

Papua Barat and *Otonomi Daerah*

Through the implementation of decentralization in 2001, Papua Barat gained *Otonomi Daerah* (Regional Autonomy) and was given a historical opportunity to dramatically develop the living standards of the rural populations of the province (Resosudarmo *et al.* 2009). This act of decentralization has brought about a lot of political attention to the region due to the fact that no other Indonesian Province has received so much attention as Papua Barat. In addition, Papua Barat has never before seen such flows of funds to the province than at the present time (Resosudarmo *et al.* 2009). The focus on decentralization in Papua Barat has brought the government closer to the people than was possible given historical settings, thus giving communities the freedom for self-governance through implementation of programs deemed necessary by respective communities.

In addition to regional autonomy, Papua Barat gained Special Autonomy through Law No. 21/2001 on Special Autonomy for Papua Barat. This law was enacted in November 2001 and has five key features:

1. The Special Autonomy Law grants provincial government authority over decision-making in all sectors except international affairs, defense, monetary and fiscal policy, religion, and the Supreme Court. According to the law, Papua Barat has the discretion to conduct international trade and investments and also take part in international exchanges of culture and technology. All treaties affecting Papua Barat are to be approved by the Papua Barat provincial government.

2. The Special Autonomy Law specifically states that the provincial parliament in Papua Barat is to consist of two chambers, an indigenous upper house (MRP) that consists of equal number of customary, religious, and female representatives, and a lower house (DPRP) that consists of elected political-party representatives.

3. The Special Autonomy Law allows Papua Barat the freedom of a provincial flag, symbol and anthem, and also permits the formation of local political parties.

4. The Special Autonomy Law grants Papua Barat a higher share of all revenues that originate in Papua Barat. According to the law, at least thirty per cent of the proceeds from oil and gas mining must be spent on education, and fifteen per cent on health.

5. Finally, The Special Autonomy Law requires the provincial government to protect the existence of customary laws and traditions. This includes the rights of traditional communities over customary land and natural resources of that land. In addition, the law provides for the establishment of both traditional and human rights-based court systems. (Resosudarmo *et al.* 2009)

'The Special Autonomy Law instilled hope among Papua Barats that the province would gain greater control over the revenues from natural resource extraction in the province and a far greater say in the direction of economic and political development' (Resosudarmo *et al.* 2009:23). However, the central government´s approach with regards to implementing the new law has been disappointing for numerous groups in Papua Barat. One example is the critique directed towards the central government and its delay in establishing the political institutions required by Law No. 21/2001, its deliberate actions in the weakening of those institutions, and finally, in splitting Papua Barat into two provinces.

Indigenous Peoples, Infrastructure, & Development

The indigenous peoples of Papua Barat are a population of about one million Melanesian Papua Barats, of which the majority live in exclusion and/or have tribal lifestyles. These tribes speak 'some 15% of the world´s known languages, despite having less than 3% of the world´s population' (and in addition, the region secretly boasts) 'one of the world´s most resource rich areas containing huge reserves of oil, gas, copper, gold, and timber' (Free West Papua Barat 2009:1). Despite the region´s cultural and natural resource diversity, Papua Barat is also known for its limited infrastructure as a result of administrative incompetency and political strife.

The neglect of the poor is a result of too little governance or inappropriate governance. Another major challenge in the terrains of Papua Barat is the extraordinary high costs of transportation that in turn makes it difficult to deliver goods and services to isolated rural communities. Lack of road or river transport networks add to the poor infrastructure of the region.

Despite the funding for *otonomi daerah*, the short-term challenges with regards to Regional Autonomy have substantial costs. Injecting money into provincial areas needs to be accompanied by structural organization. In Papua Barat, a large number of new government structures need to be organized. This is due to the increase in the number of districts and sub-districts in Papua Barat. Without the establishment of reliable governmental structures, development within respective districts and sub-districts developmental failures are inevitable. Unfortunately, 'the extraordinary increase in the public budget (due to Regional Autonomy) has created opportunities for widespread corruption, especially given the weak, and sometimes nonexistent, government structures needed to guide public administration and economic management' (Resosudarmo *et al.* 2009:59).

A second unfortunate situation in addition to widespread corruption in Papua Barat is that of the tensions between Jakarta and the Papua Barat elite. 'Most of the revenues generated by the region´s natural resources, especially those from the (well known) and profitable Freeport mine in Mimika district, went straight to Jakarta and delivered only limited development to indigenous Papua Barats' (Resosudarmo *et al.* 2009:23). The example of Freeport is unfortunately only one of many such situations. Funds earned from logging concessions are also known to *disappear* within the different levels of government. Unfortunately, developmental concerns cannot be focused upon without responsible attitudes from involved institutions and organizations.

Economic and fiscal development is important for Papua Barat. However social indicators also reveal facts about the lack of development in the province. For example, levels of infant mortality, life expectancy, and education in 2004 in eastern Indonesia were at the level of that of Java (without Jakarta) in the late 1980s (Miranti 2007). Unfortunately, trends of development with regards to life expectancy and poverty show that it will take more than two or three decades for Papua Barat to reach the standards of living in Java as of today. Although the administrative island of Java is rich in its number of inhabitants, Papua Barat is rich in natural resources and can definitely benefit from these resources. What is required is 'a framework for balancing environmental and social concerns against the need to promote economic development' (Resosudarmo & Jotzo 2009:1).

II.III Indonesia and Forest Ownership

Forest resources in Indonesia generate an output that in 1996 reached approximately \$30 billion, which was approximately ten per cent of the GDP (Gregersen *et al.* 2004). The forestry sector employed approximately 800,000 workers in addition to numerous informal workers that are unaccounted for. There are more than 10 million hectares of forest plantations in Indonesia and since independence approximately 65 million hectares have been lost to deforestation, including some 10 million hectares that were destroyed in the great Indonesian forest fires of 1998. (Gregersen *et al.* 2004) 'Current deforestation rate estimates are uncertain but it may be in the range of 1.5-2.5 million hectares per year' (Gregersen *et al.* 2004:49).

A system of forest administration was adopted by the Dutch colonial government in Indonesia and is a system that prevailed. The system was characterized as and based on centralized government control and management. 'The 1950 constitution established that forests were to be managed by the government in function a vaguely defined *national interest* and paved the way for concentrating the control of forest lands in the central government' (Gregersen *et al.* 2004:51). Unfortunately, this centralized approach did not take into consideration the traditional rights of forest communities and other groups that had claims to lands. Without any legal ownership title, the traditional communities were *legally invisible* and this created a foundation for future conflicts. In addition, the centralized structure of forest administration led to minimal transparency with regards to allocation of forest concessions to a concentrated group of firms. This lack of transparency was root for the proliferation of illegal activities and corruption (Gregersen *et al.* 2004).

'Today, after the decentralization drive, management of most forest resources falls under the responsibility of district governments and (…) while laws were enacted, the expected regulations have been slow to come' (Gregersen *et al.* 2004:51). Despite the enactment of the Law on Regional Autonomy, local governments are unsure of their precise functions and to whom they are accountable. In addition, the process of decentralization has not been easy for the Central Ministry of Forestry in Indonesia. The Ministry has had to surrender numerous powers to local governments and the reallocation of power has caused some resistance. Decentralization has brought about administrative uncertainty that ranges from accountability issues to issues related to property rights affecting local traditional communities.

However, 'the new forestry decentralization policies have been welcomed locally (…) and are considered more appropriate than the previous extractive regime (of Soeharto) because they give more recognition to the aspirations and interests of customary communities (*masyarakat adat*), particularly as they acknowledge the communities´ usufruct land rights (*hak ulayat*) in the context of natural resource-based development' (Tokede *et al.* 2005:1).

II.IV Research Areas: *Kabupaten* Manokwari, Papua Barat

The two areas within which research was conducted for the purpose of this thesis are situated in the District of Manokwari (*Kabupaten* Manokwari). *Kabupaten* Manokwari is host to Manokwari Town (hereafter referred to as Manokwari), the capital of *Provinsi* Papua Barat (Papua Barat Province) that is situated on the *Kepala Burung* Peninsula (also known as the Vogelkop or Doberai Peninsula) of the island of New Guinea. For the purpose of this thesis, the respective Indonesian terminology for each area will be used.

Papua Barats are known for strong customary social, economic, cultural and political institutions that are governed by local indigenous laws and practices. 'If managed well, these customary governance systems could be used as a foundation for developing more effective governance and natural-resource management systems in partnership with local government in the region' (Tokede *et al.* 2005:1).

Study Area I: Arfak Nature Reserve - *Kampung* Mokwam

'The 68,325 hectare Arfak Mountain Nature Reserve was declared in 1982 in the *Bird´s Head region* of Papua Barat and is situated twenty-five kilometers from the town of Manokwari' (Wells *et al.* 1999:109). The *Pegunungan* Arfak range is shyly tucked away behind the mountain of *Pegunungan* Oransini that is visible from the town of Manokwari. It is home to numerous *kampungs* (villages) and host to the Hatam tribe of Papua Barat. There are a number of sub-districts in the area of *Pegunungan* Arfak and the area of study, *kampung* Mokwam (hereafter referred to as Mokwam) is located within Minyambouw Sub-District in The Arfak Mountain Nature Reserve.

The Hatam tribes of the Arfak region are divided in sub-tribes. The community that lives in Mokwam is Hatam-Moulei and has lived in the area since the 1800s. Ancestors travelled to Mokwam from other regions of the mountain area in order to create a settlement. Per today, Mokwam is surrounded by four other small villages wherby each village has an approximate of twenty households. *Transmigrasi* has not yet reached Mokwam and the outsiders that do arrive in the area mostly consist of those working for the nongovernmental organizations.

Other visitors are tourists from other islands and abroad that come to enjoy the Nature Reserve through the nongovernmental organization´s eco-tourism programme.
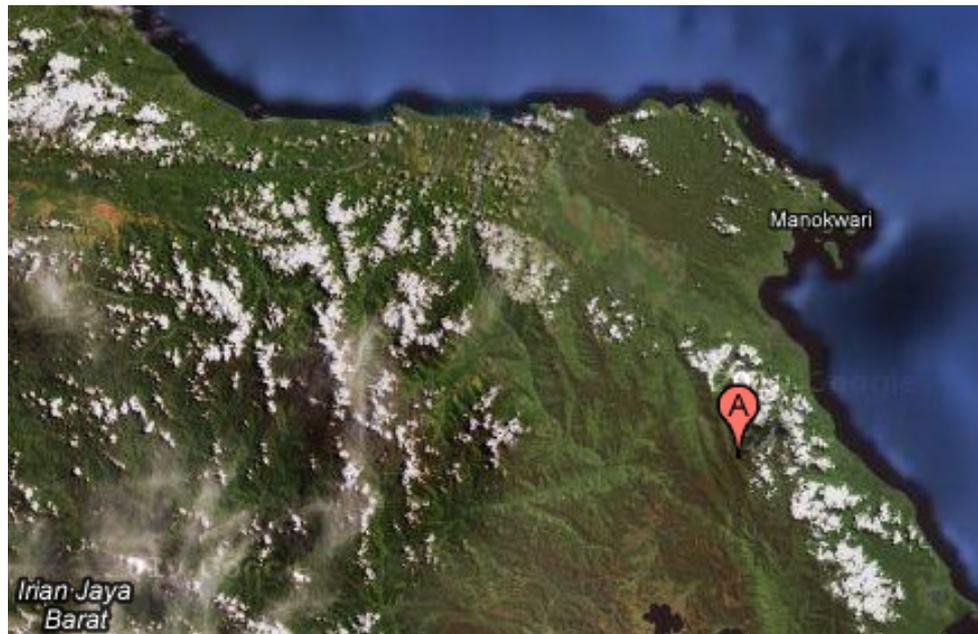
FIGURE IV – Arfak Mountain Nature Reserve Location – Position A
(Source: Google 2010)

Upon arrival to the hilly areas of Mokwam, the warm and humid air of the coastline disappears and cool mountain breezes portray the vastness of Papua Barat. Surrounded by rainforest, the friendly Hatam-Moulei of Mokwam scurry to meet any new visitor. Friendly faces are unfortunately also surrounded by poor infrastructure.

The road to Mokwam, built in 2005, although not a long distance from Manokwari, starts off as a paved road until it reaches *Pegunungan* Oransini. Thereafter, the road converts to a narrow road that has emerged where rainforest has been cleared in order to gain access to the area of *Pegunungan* Arfak. Access to and from Manokwari is a tedious drive that is dangerous during the rainy seasons. Landslides and overflowing rivers may cut off Mokwam and other communities in the area from the city. Due to the difficulties of reaching the remote area of Mokwam a mere drive of twenty-five kilometers tends to take at least an hour and a half. Before 2005, non-residents wishing to visit Mokwam had to charter flights that would land on the landing strip in the middle of the village. Until 2005, local inhabitants had to carry their vegetables and walk over the Oransini mountain range in order to reach Manokwari. The road has now introduced a service of expensive public transportation that leaves the village every morning heading for Manokwari.

The lack of infrastructure in the area does not unfortunately stop there. The school building is not facilitated and there is only one teacher that teaches the children of Mokwam and the nearby villages, despite the age of the pupils. Health facilities are limited and there is one nurse that tends to the inhabitants of Mokwam and the surrounding villages. Malaria and diarrhea are medical conditions that affect the inhabitants of Mokwam frequently. Medication is scarce and occasionally, lives are lost due to lack of appropriate medical assistance.

With approximately twenty households, the village of Mokwam is home to Hatam-Moulei peoples who depend on farming as their main livelihood. Rainforest is cleared to make farms and animals and birds of the rainforest are hunted and provide meals in the respective households. Produce from farming is consumed at the household level and also sold in the markets of Manokwari. However, income levels vary according to the amount of produce available and whether or not inhabitants have enough money to use public transportation in order to sell their produce in Manokwari. Farmers have farms in the vicinity of the village and some farms are situated kilometers away. For those that have farms on ancestral lands a long distance away from Mokwam, staying on the farms for a few days at a time is the most economically feasible solution as daily travel is impossible.

The trees that are felled for creating farming land are used as construction material for homes. Although villagers receive sums of money for building homes through the Special Autonomy Fund, they still need wood as additional construction material. Wood is also used for daily materials such as cooking utensils and furniture. Tree felling takes time and is costly for the health of the men who carry out the activity. The hardships of life in the village are numerous and everyday living is a challenge.

Study Area II: Manokwari *Utara*

Manokwari *Utara* encompasses the northern areas of Manokwari District and is the sub-district that lies on the northern coast of Manokwari town. The road from Manokwari to the city of Sorong on the west most end of the *Kepala Burung* Peninsula follows the northern coastal area of the peninsula. The area of Manokwari *Utara* is populated with villages along the coast and by the paved road that was built in 2005. The first of the villages on the outskirts of the Manokwari city and in Manokwari Utara is Pami. Research was conducted in the villages of Pami, Nuni, Saobeba, and Mubrai.

FIGURE V –
Map Showing location of Manokwari *Utara* – Position A
(Source: Google 2010)

The population of Manokwari *Utara* comprises mainly of indigenous peoples of the Arfak tribe but also of migrants from different areas within Papua Barat, the central islands of Indonesia, and Holland. Papua Barat migrants in the area of Manokwari *Utara* are indigenous peoples who have been relocated from remote areas to coastal areas. The main purpose of this migration has been to gain better economic and social networks and thus better livelihoods. Missionaries and the government have initiated and assisted in these migration schemes. *Transmigrasi* migrants live in the villages of Pami, Nuni, and Mubrai. International migrants consist of Dutch citizens who have migrated to the village of Mubrai.

The road leading through Manokwari *Utara* was constructed in 2005 and has given the villagers access to Manokwari and other nearby villages, thus increasing business

opportunities. Transport is relatively expensive for the indigenous peoples and other forms of infrastructure do not meet their needs. Schools are scarce and in the occasional event that there is a school in the village, education standards are low and do not go beyond primary level schooling. Health facilities are also scarce.

With coastal access to the north and rainforest to the south, the villages of Manokwari *Utara* have a variety of natural resources available to them. In addition, the Indonesian government initiated a cocoa plantation in the region in 1996 that lasted until 2003 and generated substantial income for the villages. Even after the locust infestation that destroyed most of the plantation in 2003, some villagers do manage to yield cocoa that is sold in Manokwari and provides an income. The village of Nuni has a village collective that provides timber to furniture shops in Manokwari. This is an additional source of income. The inhabitants of Mubrai are mainly fishermen and farmers. Other forms of livelihoods in the sub-districts consist of small businesses such as kiosks and roadside shops that sell fruits and vegetables.

The inhabitants of both research areas are forest dependent communities, although the inhabitants of Manokwari *Utara* have other options with regards to alternative livelihoods. A lack of infrastructure and prevailing poverty in both the research areas leaves the inhabitants dependent on the immediate natural resources available in the respective areas. When the majority of people within a given area are dependent on the rainforest, the threat of over exploitation becomes a challenge. Due to the threat of over exploitation and the link between deforestation and forest degradation to excessive release of carbon dioxide in the atmosphere, measures need to be taken in order to reduce deforestation and land degradation.

CHAPTER III

REDD: Reducing Emissions from Deforestation & Forest Degradation

Chapter III is a brief informative chapter that presents the concept of Reducing Emissions from Deforestation & Forest Degradation by enhancement of forest carbon stocks in developing countries (REDD). Section one begins by presenting highlights of the Kyoto Protocol and how its mechanisms are important in the concept of carbon trade and the carbon market. Section two introduces the link between deforestation and forest degradation and greenhouse gas (GHG) emissions. Section three briefly introduces the concept of REDD with a focus on monitoring, evaluating, and Payments for Environmental services (PES) by using community forest management to achieve REDD goals. Section four presents REDD at the national Indonesian level.

III.I Global Warming & The Kyoto Protocol

The Kyoto Protocol (hereafter referred to as the Protocol) was adopted in Kyoto, Japan, in 1997 and is an international agreement between 37 industrialized countries and the European community. The Protocol entered into force in 2005 and is linked to the United Nations Framework Convention on Climate Change (UNFCCC). Climate change is defined as 'any change in climate over time, whether due to natural variability or as a result of human activity' (UNEP 2007:517). There is, however, a major distinction between the UNFCCC and the Protocol, i.e. the Convention *encouraged* the stabilization of GHG emissions whilst the Protocol *commits* the industrialized countries to reduction of emissions. The agreement between the countries is based on binding targets for the reduction of GHG emissions. GHGs are 'gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth´s surface, the atmosphere, and clouds. This property causes the *greenhouse effect*' (UNEP 2007:529).

The *greenhouse effect* is caused by GHGs that possess high emissivity at certain infrared wavelengths - 'atmospheric infrared radiation is emitted to all sides by those GHGs, including downward to the Earth´s surface' (UNEP 2007:520), thus adding more heat to the Earth´s atmosphere. Global warming is defined as 'changes in the surface air temperature, referred to as the global temperature, brought about by the enhanced greenhouse effect, which is induced by emission of GHGs into the air' (UNEP 2007:519).

The Protocol recognized how industrialized countries contribute largely to GHG emissions and acknowledged that GHG emissions are not a recent phenomenon. 'The current high levels of GHG emissions in the atmosphere are a result of more than 150 years of industrial activity' (UNFCCC 2010). Thus, a heavier burden is placed on developed nations under the Protocol in order to ensure reduction of carbon emissions.

Carbon Trading at the Carbon Market

Reduction of carbon emissions is done through *carbon trading*, which is *'a mechanism developed to reduce global emissions of carbon dioxide, the major greenhouse gas leading to global warming'* (Jia 2006:1). Carbon trading, 'an idea presented in response to the Protocol (…) involves the trading of GHG emissions rights between nations' (Investopedia 2010). Through the Protocol´s mechanisms, carbon is given an economic value so that actors in the carbon market are able to *trade* it. The *carbon market* is *'a market created to facilitate the buying and selling of the right to emit GHGs'* (Investopedia 2010).

The establishment of carbon trading at the carbon market was brought about through the Kyoto mechanisms (UNFCCC 2010):

1. *Emissions Trading*: (defined in Article 17 of the Kyoto Protocol) allows countries that have spare emission units to sell their excess capacity to countries that are over their targets. Countries with commitments under the Protocol (Annex-B Parties) have accepted targets for either limiting or reducing emissions. These targets are assigned amounts and express levels of allowed emissions, over the 2008-2010 commitment period.

2. *Clean Development Mechanism (CDM)*: (defined in Aritcle 12 of the Kyoto Protocol) is a project-based mechanism whereby countries that are committed to emission-reduction or emission-limitation are allowed to implement emission reduction projects in developing countries. The gain for committed countries in being involved in such projects is that these countries can earn saleable verified emission reduction (CER) credits, which may be counted towards meeting Kyoto targets. With each project equivalent to one ton of CO_2, Annex-B countries benefit from them.

3. *Joint Implementation (JI)*: (defined in Article 6 of the Protocol) is also a project-based mechanism and allows Annex-B Parties to earn emission reduction units (ERUs) from a reduction or limitation project in another Annex-B Party, where each is equivalent to one ton of CO_2 and can be counted towards meeting Kyoto targets.

The purpose of the three mechanisms is to ensure stimulation of sustainable development through technology transfer and investment. In addition, the mechanisms aid countries with Kyoto commitments to meet targets of emission-reduction or emission-limitation in other countries in a cost-effective way. Finally, encouragement of private sector organizations and developing countries to contribute toward emission reduction aids in the efforts of controlling global CO_2 emissions (UNFCCC 2010).

III.II Forest Loss & Global Carbon Balance

'The deforestation of tropical (…) forests is a major global environmental problem, threatening the survival of half of all species of plants and animals, and contributing to global climate change via the greenhouse effect' (Grainger 2002:310). The two main human impacts on forests are those of deforestation and degradation. 'Deforestation can be defined as the temporary or permanent clearance of forest for agriculture or other purposes' (Grainger 2002:310) and forest degradation is the 'changes within the forest that negatively affect the structure or function of the stand or site, and thereby lower the capacity to supply products and/or services' (UNEP 2005:519).

Causes of Deforestation and Degradation

Causes of deforestation and forest degradation are numerous and the immediate causes should be distinguished from the underlying causes. The immediate causes of deforestation consist of the wide range of land uses that replace forest, including various types of shifting and permanent agriculture, as well as non-agricultural land uses such as mining and other natural resource exploitation (Grainger 2002). The underlying causes of deforestation and degradation are the socioeconomic factors and government policies that lead to the demand for a change in land use. Socioeconomic factors such as population growth, economic growth (both within the respective forest nation and global economic growth), and issues of poverty and inequality add to the burdening pressures of the development dilemma. For example, under-privileged citizens of a nation are forced to flee from cities or other overpopulated areas to clear forest to feed themselves and their kin (Grainger 2002). Indonesia´s *transmigrasi* programme is one such example. Facilitating factors such as proximity of rivers and roads, fragmentation of forests, topography and soil fertility force an increase in degradation

activities. State intervention through agricultural and forestry policies and concessions do not always take into consideration environmental factors with regards to deforestation and forest degradation (Grainger 2002). 'Governments influence deforestation rates directly, by specifically planning or promoting forest clearance, and indirectly through their social and economic policies' (Graiger 2002:312). Finally, external factors such as global demand of timber and financial conditions play a bi-role in the world´s current deforestation issues.

Global Carbon

The concern about deforestation and its role within the context of the global carbon balance is central to climate change. 'This issue was central to debate over the successor to the post-Kyoto climate regime post-2010, particularly at the United Nations Climate Change Conference in Bali, December 2007' (Adams 2009:245).

Global interests focus on attempts to re-establish cleared forest (funded by developing markets in carbon) and to preserve standing forest in order to behold the carbon locked in its ecosystem (Stier & Siebert 2002; Bonnie & Schwartzman 2003, as cited in Adams 2009). 'The argument for strategies based on reduced emission from deforestation and degradation (REDD) is that forest loss (to all causes) releases more carbon to the atmosphere than the fossil-fuel-intensive global transport industry' (Adams 2009:245), but is dependent on the fact that a clear understanding of the causes of forest loss are mutual in both developed and developing countries.

III.III REDD Governance

'Reducing Emissions from Deforestation and Forest Degradation in developing countries (…) is among the recent additions to the climate vocabulary' (Angelsen & Wertz-Kanounnikoff 2008:11). REDD is more of an objective rather than a clearly set of action or activities and can be depicted as a form of forest management initiatives. It is a mechanism that aims to provide developing countries with incentives through monetary payments to reduce forest sector emissions (Angelsen *et al.* 2008). The concept of Reducing Emissions from Deforestation & Forest Degradation by enhancement of forest carbon stocks in developing countries (REDD+) takes REDD a step further by including forest carbon stock enhancement in the concept. REDD will be the concept related to for the purpose of this thesis.

REDD primarily refers to the development of mechanisms to make payments to developing nations for their efforts in reducing emissions from deforestation and forest degradation when compared to a reference level, and induce activities which prepare countries to readily participate in the REDD mechanism (Angelsen & Wertz-Kanounnikoff 2008).

A core issue of the concept is to create a scheme that addresses *payments for environmental services* (PES) at a multi-level, i.e. at international and national levels. The environmental service provided is the service whereby developing countries show evidence of reduced emissions that are caused due to deforestation and forest degradation.

At the international level, service buyers will make payments that are generated by voluntary or compliance markets. These payments will be made to service providers, i.e. governments or subnational entities in developing countries that provide an environmental service or measures that are likely to deliver this service through tenure reforms and/or law enforcements.
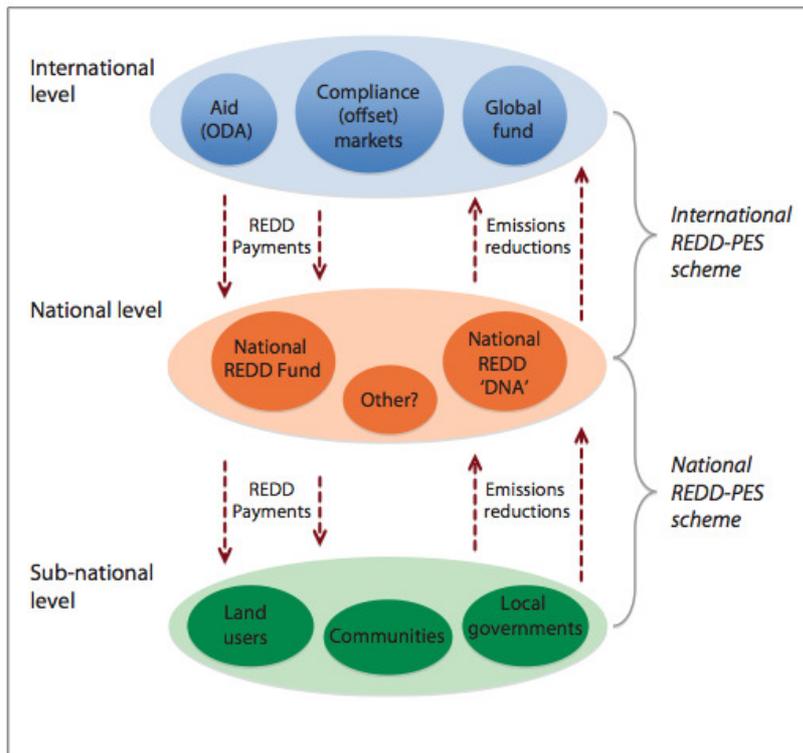
At the national level, governments and service buyers are expected to pay subnational governments and/or local landowners, i.e. the service providers who reduce emissions, or take other measures that are likely to reduce emissions (Angelsen & Wertz-Kanounnikoff 2008)

FIGURE VI Conceptual model of a multi-level REDD PES Scheme
(Source: Angelsen & Wertz-Kanounnikoff 2008:12)

Direct payments from the international level to the sub-national level will only be possible where the transactions are approved through a national government agency, 'as is the case under the current Clean Development Mechanism (CDM) and Joint Implementation (JI) under the Kyoto Protocol' (Angelsen & Kanounnikoff 2008:12). As is seen from the PES scheme above, REDD payments will be made both to national and subnational levels only in cases where emissions reductions apply. In looking closely at the three levels of the REDD concept, there are three approaches to REDD accounting and crediting.
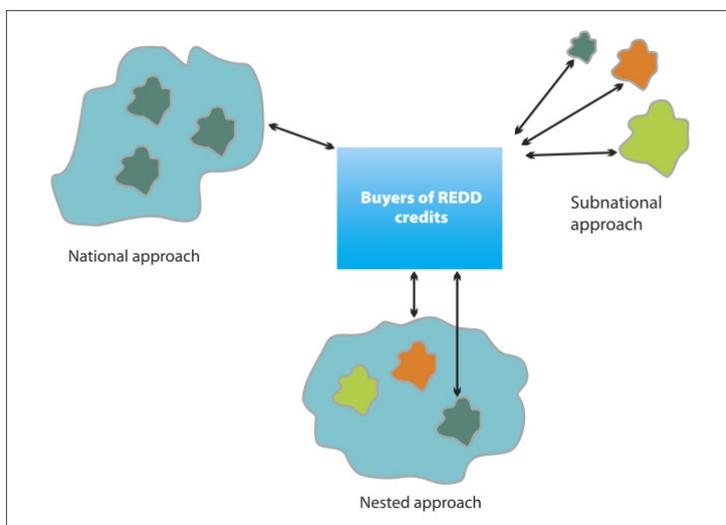
REDD Accounting & Crediting

The three approaches that are proposed in REDD are those of the international, national, and subnational level and are illustrated in Figure VII. The subnational approach proposes that REDD activities are implemented in a defined geographical area. Other options of implementation at the

FIGURE VII Three approaches to REDD accounting & crediting
(Source: Angelsen *et al.* 2008:32)

subnational level are as projects by individuals, communities, nongovernmental organizations, private companies or national or local governments.

The *national approach* reflects national experiences with regards to leakage and transaction costs in project approaches whilst addressing sovereignty issues. The national approach acknowledges that combating deforestation means broad policy changes which eventually will bring the potential to achieve larger-scales of CO_2 reductions (than subnational or nested approaches) that are of a more permanent nature (Angelsen *et al.* 2008). 'Governments taking a national approach would establish a national system for Monitoring, Reporting, and Verification (MRV); REDD system for crediting, and would be rewarded for emission reductions measured from an established reference level' (Angelsen *et al.* 2008:34). However, at this level leakages can be an issue.

The 37 developed countries in the Kyoto Protocol´s Annex I have agreed to cap their industrial emissions. However, increasing imports from non-Annex I countries may cause emission *leakage*. 'GHG net emission reductions in one area are affected by project-attributable emissions outside of targeted mitigation areas (…) leakage can occur whenever the spatial scale of intervention is inferior to the full scale of the targeted problem' (Wunder 2008:65). Since carbon mitigation is a global goal, leakage can occur at various scales ranging from the farm-level to the local or regional level and finally to the national or international level. Leakage can be detected in numerous sectors.

In the event of an exclusive national approach, a country could also allocate some of the national credits to projects, reducing deforestation and degradation, compensating districts, communities, and farmers for the costs of forest conservation (Angelsen *et al.* 2008). In doing so, a PES system that extends global REDD systems to the local level will be introduced and although the scheme would not be considered exclusively national, it would be considered as part of the international REDD agreement nonetheless.

Suggestions of integrated subnational activities into national accounting frameworks through a *nested approach* allow nations to start REDD activities at any level. Initiatives that are started at the subnational level have the opportunity to scale up to a national approach as capacities are strengthened and governance improved. 'Transition to a national approach would be mandatory, either within an agreed time frame or when an agreed percentage of forest area is covered by REDD projects, whichever comes first' (Angelsen *et al.* 2008:34). Although a transition to the national level at some stage would be obligatory, it would be possible to credit individual project activities. Thus, the nested approach has two unique features:

1. The capacity to scale upwards from a subnational to a national approach over time and
2. Respective nations have the option to account for and receive international credits at subnational and national levels simultaneously (Angelsen *et al.* 2008).

This approach would require a coordination of MRV procedures and reference levels at the national and local levels. This is due to the fact that accounting and crediting takes place at both subnational and national levels within the nested approach. 'An arrangement for sharing credits between the two levels could be modeled on the Kyoto Protocol Joint Implementation (JI) mechanism' (Angelsen *et al.* 2008:34). This would mean that the respective nation would have to deduct all credits issued and committed at subnational levels from national emission

reductions. This would lead to independent validity and verification of subnational activities in the event that national level actors fail to deliver carbon benefits to subnational levels. Such a scheme would ensure valid credits to subnational levels in the events of corruption and failure of REDD governance.

Monitoring Deforestation and Forest Degradation

'As with all three approaches, crediting REDD activities would require internationally agreed rules for monitoring, reporting, and verification (MRV), a system for crediting (payment), and institutional arrangements at both the national level (…) and the international level' (Angelsen *et al.* 2008:32). Crediting at the national level would be through a designated national authority or similar entity that approves all projects. Crediting at the international level, on the other hand, would be to a supervisory body and a centralized project and credit registry (Angelsen *et al.* 2008). Environmental monitoring is defined as 'continuous or regular standardized measurement and observation of the environment' (UNEP 2007:521).

'Remote sensing is the only practical method for national-level deforestation monitoring (Defries *et al.* 2006, as cited in Wertz-Kanounnikoff *et al.* 2008:89). Cost effective monitoring and evaluation systems for REDD requires a balanced approach of remote sensing and ground measurements (required for carbon measurements and to verify desktop forest mapping from satellite images) (Wertz-Kanounnikoff *et al.* 2008).

'Carbon emissions from deforestation and forest degradation are estimated from changes in two important variables:
1. Area of deforestation and degradation; and
2. Carbon stock densities per unit area' (Wertz-Kanounnikoff *et al.* 2008:89).

There are two common approaches for monitoring deforestation areas:
1. Wall-to-wall mapping – whereby the entire country or forest area is monitored. Successful wall-to-wall mapping monitoring schemes have been conducted in Brazil and India in the past decade.
2. Sampling approaches are monitoring methods that are most useful in specific areas of a country where deforestation is concentrated to that area. 'Recommended sampling approaches include *systematic sampling*, whereby samples are taken at regular intervals (for example, every ten kilometers) and *stratified sampling*, whereby samples are determined by known proxy variables (for example, deforestation hotspots)' (Achard *et al.* 2008, as cited in Wertz-Kanounnikoff *et al.* 2008:89). Such sampling approaches have been used in the Brazilian Amazonian Rainforest through Projeto Monitoramento da Floresta Amazônica Brasileira por Satélite - PRODES (Wertz-Kanounnikoff *et al.* 2008).

It is important to note that one monitoring approach does not exclude the other. In other words, 'a sampling approach in one reporting period may be extended to wall-to-wall coverage in the subsequent period' (Wertz-Kanounnikoff *et al.* 2008:90) and vice versa. Thus, wall-to-wall mapping in one period may be followed by stratified sampling in the next period. However, monitoring activities are of little help if REDD initiatives cannot be effective, efficient and equitable.

REDD – Effectiveness, Efficiency, & Equity

Angelsen *et al.* (2008) present a table that illustrates the pros and cons of subnational, national, and nested approaches in terms of the *3E* framework which assesses the carbon effectiveness, cost efficiency, and equity and co-benefits of the REDD concept.

REDD model	CRITERIA		
	Effectiveness	Efficiency	Equity & Co-benefits
Subnational approach	+ Broad short-term participation + Attractive to private funders - Domestic leakage problem - Does not trigger the required policy changes - Weak involvement of host countries	$\pm$ MRV costs lower overall but higher per CO_2 equivalent + Differentiated incentive payment possible: lowers costs	+ Easier participation by poor countries and those with weak governance + Can target poor domestic groups and create more opportunities for community participation
National approach	+ Broader set of policies pursued + Captures domestic leakage + Stronger host country ownership - Unsolved issues of reference levels	+ Lower MRV and transaction costs per CO_2 equivalent + Low-cost (non-PES) policies available - Potential for policy and governance failure	+ Potentially larger overall transfers + Better alignment with national development strategies - Favors middle-income countries - Risk of high level and elite capture ('nationalization' of carbon rights)
Nested approach	+ Combines strengths of other two approaches + Flexibility based on national circumstances + Potential for larger overall transfers - Unsolved issues of reference levels	+ Both differentiated compensation pay and low-cost broad policies - High MRV costs (which requires disaggregated national data) - Challenge to harmonize between national and subnational	+ Increased country participation and larger transfers to poor countries + Possible to target poor groups

Table I
Pros and cons of subnational, national, and nested approaches (Angelsen *et al.* 2008:36)

'The cost efficiency of the three approaches to REDD is likely to be affected by the costs of MRV, the costs of implementing policies, and opportunity cost payments' (Angelsen *et al.* 2008:37). Although there are costs involved in implementing REDD initiatives, the main national challenge with regards to REDD in general is to coordinate the subnational levels with the national levels in respective nations.

III.IV Green Procurement, Indonesia & REDD

'Deforestation is an entirely predictable consequence of development in forested countries, not an aberration' (Grainger 2002:313). The global development-dilemma is how forests can be maintained whilst economic and social conditions are improved in developing countries. REDD, although being one of the latest terms within green procurement, faces realities *in the field*. Green procurement is defined as the action of 'taking environmental aspects into consideration in public and institutional procurement' (UNEP 2007:519).

Lack of definition such as ownership of forestland is often unclear or contested in developing nations. In addition, issues with regards to weak governance, corruption, and power struggles in such countries affect effective implementation of forest management strategy. Forest management is defined as 'the processes of planning and implementing practices for the stewardship and use of forests and other wooded land aimed at achieving specific environmental, economic, social and/or cultural objectives' (UNEP 2007:519).

Indonesia & REDD

Indonesian Law No. 41 of 1999 and No. 5 of 1990 address Forestry, and Conservation of Biological diversity and the Ecosystem respectively. They serve as the legal grounds and reference in conserving natural resources and managing forests of Indonesia with a focus on sustainability (Masriputin 2010). Law 41/1999 mandates that forests are to be regulated by the state of Indonesia which at the same time should take into account the rights of indigenous peoples. Thus management of Indonesian forests, which cover approximately 60% of the total national area is carried out by the Ministry of Forestry (Masriputin 2010). However, better management is required at the local levels through the involvement of local forest communities and indigenous peoples.

The Indonesian forestry sector has set and implemented five prioritized policies since 2000. These policies were revised and towards the end of 2009, eight policies were adopted. These policies address current and future challenges with regards to deforestation and forest degradation:
1. '*Strengthening forest boundaries to secure forest areas,*
2. *Rehabilitation of degraded forest and improving carrying capacity of watershed,*
3. *Forest Protection and Fire management,*
4. *Conservation of biological diversity,*
5. *Revitalization of forest utilization and forest industries,*
6. *Empowerment of indigenous peoples and local communities,*
7. *Mitigation of and adaptation to climate change, and*
8. *Strengthening Forest Institutions* (Masriputin 2010:8).

Indonesia has commenced its journey down the road to successful implementation of REDD initiatives. The preparation phase began in 2007 whereby analyses were conducted with regards to the architecture of REDD and its strategies. Communication, coordination and consultations were carried out and design features, system establishments, and pilot project designs came about already at the end of 2007 and the beginning of 2008. During the turn of the year 2008-2009 work with regards to demonstrations, testing and knowledge management

of REDD had already commenced. These readiness activities in addition to carbon-finance pilot projects will be carried out and tested until 2010. After this stage, Indonesia aims to fully implement REDD. Thus, the *REDDI Road Map* can be can be divided into three different phases.

Phase I: Preparation Phase (2007-2008) where an analysis on the preparedness of Indonesia is carried out.
Phase II: Readiness Phase (2009-2012) preparation of methodology and policy frameworks for REDDI implementation.
Phase III: Full Implementation (Post 2012) full implementation of REDDI according to international rules and regulations (Masriputin 2010).

REDDI – Readiness Phase (2009-2012)

The second phase of REDD implementation that Indonesia currently finds itself in is vital in order to ensure full implementation at a post 2010 stage. Current strategies are adopted at both national and subnational levels.

REDDI – Readiness Phase (2009-2012) – National Level Strategy
1. Policy interventions that address drivers of deforestation and forest degradation in different landscapes of forested areas.
2. Preparation of REDD regulations, for example, procedures of REDD implementation and establishment of REDD committees.
3. Methodology (establishment of Reference Emissions Level (REL)) and development of MRV System.
4. Institutional setting (establishment of REDD committee, national registry, financing including distribution of incentive and accountability, capacity building, stakeholder communication).
5. Relevant analysis (REL, MRV, cost and benefit analysis, impacts, risks).

TABLE II – National Level Strategy REDDI in Readiness Phase (Based on Masriputin 2010:13)

REDDI – Readiness Phase (2009-2012) – Subnational Strategy
1. Actions addressing drivers of deforestation and forest degradation in different landscapes of forested areas.
2. Methodology (establishment of REL) and development of MRV System.
3. Institutional setting (establishment of REDD committee, national registry, financing including distribution of incentive and accountability, capacity building, stakeholder communication).
4. Development of Demonstration Activities (DA)-REDD which represent various bio-socio-geographical conditions.

TABLE III – Subnational Level Strategy REDDI in Readiness Phase (Based on Masriputin 2010:13)

Implementation at the subnational level, i.e. provincial, district, and management units, are further integrated into national accounting through Indonesia National Carbon Accounting

System (INCAS), which is an integrated system that applies all data collected from Land Use, Land Use Changes and Forestry (LULUF) or Agriculture, Forestry and Other Land Use (AFOLU). The data collected is applied in order to obtain a full profile with regards to GHG emissions using remote sensing data, data on land and forest management, land and climate data, and plant growth and biomass data (Masriputin 2010). INCAS development is still at the initial stages and focus is being given on the processing of data collected with regards to forest cover and research and analysis of data related to changes in biomass and carbon stocks.

Two vital initiatives that will enhance the implementation of REDDI are those of Forest Carbon Partnership Facility (FCPF) and United Nations REDD (UNREDD). Several activities under both programmes are directed towards effective REDDI in supporting readiness strategies. FCPF components are related to analytical work with regards to REDD and management of readiness processes including institutional settings and legal frameworks, capacity building, regulatory arrangement for REDD incentives, to name a few. In addition, FCPF facilitates the establishment of Reference Emissions Levels (REL) and MRV systems. Finally, FCPF facilitate development of new demonstration activities that comply with REDD guidelines. Meanwhile, the UNREDD programme consists of three major components, concerning stakeholder involvement, facilitation of activities related to establishment of REL and development of MRV systems, and finally, the development of Demonstration Activities - REDD (DA-REDD) at district levels (Masriputin 2010).

Subnational level activities are DA-REDD activities and 'serve as a learning by doing facility and means of building commitment and synergy of stakeholders' (Masriputin 2010:16). Thus, development of DA-REDD activities will give future insight as to the progress of REDDI in Indonesia. DA-REDD, being a vital component to the success of REDDI is being developed in the readiness stage through collaboration between Indonesia and other governments, such as those of Australia and Germany. Several REDDI initiatives have been implemented on the island of Kalimantan. However, REDDI initiatives have not been implemented in Papua Barat as of yet, although awareness conferences and seminars have been carried out.

The assessment of social dynamics within the Papua Barat context is necessary in order to ensure successful implementation of REDDI initiatives in the region. The range of theories presented in the following chapter present a theoretical background supporting the research conducted in this thesis.

CHAPTER IV

Theories and Prior Research

This chapter highlights literature and theoretical works that support the research. Presented in six sections, each section aims to provide relevant information for the compilation of a complete theoretical background supporting the research questions presented in chapter I. Cases related to forestry and other natural resource management are presented as examples of successful measures towards common-pool resource management. The cases assist in providing a real life setting for the theories presented. They will be analyzed with regards to the thesis aim and objectives in chapter VII. Section one is a brief presentation of indigenous peoples and provides the setting of the theoretical background. Thereafter, section two presents theories related to the commons. Hardin´s (1968) Tragedy of the Commons and 2009 Nobel Memorial Prize in Economic Sciences winner, Elinor Ostrom´s (1990) work on common-pool resource management, are presented. Section three proceeds with theories on social capital. Bourdieu, Putnam, and Coleman´s theoretical viewpoints are briefly touched upon and the broad context of the definition of social capital is presented. Kristiansen´s (2004) model on interplay between subcultural characteristics, social networks, and entrepreneurial resources highlights the various factors of importance with regards to social networks and the build-up of human capital. Section four presents Rothstein´s (2005) concept of a social trap. Theories of collective action, such as Olson´s (1965) The logic of collective action, illustrate attitudes towards human behavior with regards to trust. Theories on self-governance as the basis for empowerment are presented in section five. Finally, section six presents a theoretical framework based on the theory presented in the chapter.

IV.I Indigenous Peoples

> *'Indigenous communities, peoples and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the society now prevailing on those territories, or parts of them. They form at present non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal patterns'* (Cobo (1986) in McNeish and Eversole 2005:5, cited in Reinfjord 2009: 5)

The definition above presents a general concept as to what indigenousness circumferences. Different indigenous peoples define their indigenousness according to what their realities are and thus may or may not fall under the generalization above. However, although definitions seem to box-in terms, the above definition does imply common traits and frustrations amongst indigenous peoples worldwide:

- *'Strong ties to land and territory;*
- *Experiences or threats of dispossession from their ancestral territory;*
- *The experience of living under outside, culturally foreign governance and institutional structures; and*
- *The threat of assimilation into dominant sectors of society and loss of distinctive identity'* (Reinfjord 2009:6).

The four points above are no doubt intertwined; land rights and threats of dispossession are strongly connected to the third issue of foreign governance and institutional structures, which, in turn threaten the peoples identities. The issue of foreign governance and institutional structures does not necessarily imply to that of governance by foreign nations, but implies to that which is foreign to the indigenous peoples.

Over 370 million indigenous peoples inhabit vast areas of our globe. Africa, the Americas, Asia, Europe and the Pacific hosts impoverished, marginalized, and victimized indigenous peoples whose challenges encompass lack of basic respect from non-indigenous groups of their respective regions (IWGIA 2009). Thus, in 2007 the United Nations (UN) General Assembly adopted the United Nations Declaration on the Rights of Indigenous Peoples. Articles 2 and 3 of the United Nations Declaration on the rights of Indigenous Peoples state:

> *'Article 2: Indigenous peoples and individuals are free and equal to all other peoples and individuals and have the right to be free from any kind of discrimination, in the exercise of their rights, in particular that based on their indigenous origin or identity.*
>
> *Article 3: Indigenous peoples have the right to self-determination. By virtue of that right they freely pursue their economic, social and cultural development.'* (UN 2007:1)

In the free pursuing of their economic, social and cultural development, man/indigenous peoples around the globe face the challenge of balancing their forest-dependent livelihoods

with that of sustainable development, as 'forest resources (…) have become major news of recent times, especially given the impact of deforestation on global climate change' (Ostrom 2008:14). In addition, these peoples face challenges with regards to collaboration with other entities such as governmental and non-governmental institutions, whilst still maintaining their rights of freedom and equality as mentioned in Article 2 of the UN Declaration on the rights of Indigenous Peoples. The challenge lies within managing the commons of the world.

IV.II Managing the Commons

'*Commons* is a general term that refers to a resource system shared by a group of people' (Hess & Ostrom 2007:4). The size of a common varies and may be a community-level playground or global-level atmosphere. A common may have clear boundaries, no boundaries, or have trans-boundaries, for example in the case of rainforests (Hess & Ostrom 2007).

> '*Commons analysts have often found it necessary to differentiate between a commons as a resource or resource system and a commons as a property-rights regime:*
>
> - *Shared resources systems – called common-pool resources – are types of economic goods, independent of particular property rights.*
>
> - *Common property on the other hand is a legal regime – a jointly owned set of rights'* (Bromley 1986; Ciriacy-Wantrup & Bishop 1975, cited in Hess & Ostrom 2007:5).

Sustainability addresses outcomes over long periods of time and 'the potential challenges in the use, governance, and sustainability of a common can be caused by some characteristic human behaviors that lead to *social dilemmas*' (Hess & Ostrom 2007:5). These dilemmas include competition for use, selfish overuse, lack of knowledge of overuse, lack of regulatory frames and many others. Social dilemmas are explored in section four of the chapter.

Hardin´s *Tragedy of the Commons* is a well-known metaphor that 'has come to symbolize the degradation of the environment that is expected whenever many individuals use a scarce resource in a common without accepted and enforced rules to limit their use' (Hess & Ostrom 2007:352).

The Tragedy of the Commons

In a 'pasture open to all', Hardin (1968) asks his readers to imagine how each herdsman, as a rational being, will ultimately always try to keep as many cattle on the common to maximize (his) personal gain. In times before a so-called 'civilization', Hardin states that the population of man and beast was controlled by natural factors such as wars, disease and poaching and the phenomenon of over-use was thereby limited. However, when social stability is introduced, the carrying capacity of the land is reduced and over-use is inevitable, as wars, disease and poaching are minimized.

While maximizing individual gains, herdsmen keep adding one more beast to the commons. In doing so, there evolves both a positive component and a negative component of this action.

The positive component is the profit made by each herdsman for the sale of each beast. Thus, according to Hardin, the positive utility is nearly +1. However, the negative component is one that is shared by all the herdsmen as each adds one beast to the commons. The additional over-grazing created by the introduced animals makes the negative component for each herdsmen only a fraction of -1. Thus, in adding together these components, the rational herdsman concludes that the sensible course is to add another animal to his herd. Since the negative component for each herdsman always remains a fraction of -1, logically, each herdsman keeps adding beast after beast to the commons. Hardin´s most famous quote suggests:

> *'Each man is locked into a system that compels him to increase his herd without limit – in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a common brings ruin to all.'* (Hardin 1968:1244)

Hardin portrays a scenario whereby the selfish act of each individual thought of best interest, reduces the resource benefits available for the next individual. This is the concept of subtractability, where, 'one person´s use subtracts from the available benefits for others' (Hess & Ostrom 2007:352).

Ophuls (1973:228, as cited in Ostrom 1990) argued that 'because of the tragedy of the commons, environmental problems cannot be solved through cooperation (…) and the rationale for government with major coercive powers is overwhelming'. In his conclusion, Ophuls emphasizes the need for control by the state, in order to avoid the tragedy of the commons. He cites Hobbes´ *Leviathan*[1] as an exemplification of his opinion.

A decade later, Hardin (1978) argued that due to the 'cloud of ignorance' that people in general are trapped within; 'if ruin is to be avoided in a crowded world, people must be responsive to a coercive force outside their individual psyches, a 'Leviathan', to use Hobbes´term' (Hardin 1978:314, as cited in Ostrom 1990). Ophuls and Hardin both presume that an external Leviathan is necessary to address future environmental issues and as Ostrom (1990) interprets, these presumptions recommend the management of most natural resource systems to be carried out by central governments.

However, although Hardin presents one of history´s most often cited and influential articles within the social sciences, 2009 Nobel Memorial Prize in Economic Sciences winner, Elinor Ostrom and other scholars beg to differ. According to Bollier (2007), a socially managed common can be entirely sustainable over long periods of time with proper institutional design and social norms, thus avoiding a so-called inevitable tragedy mentioned by Hardin (1968).

---

[1] Hobbes Leviathan: The nature of man is such that pride and other passions lead him to submit himself to a *Leviathan*. Hobbes meant that people in general, incapable of governing themselves, need a strong central authority, a *Leviathan* to lead them. (Hobbes 1651)

Common-Pool Resource (CPR) Management

Literature on the commons has been developed with a steady pace since the early 1990s, when Elinor Ostrom´s publication *Governing the Commons* (1990) became a landmark (Bollier 2007). The temptation of overusing the commons is a phenomenon that occurs over the globe and poses threats that are harmful for the future of the environment and individuals alike. 'These resource systems are all common-pool resources (CPRs), where excluding potential appropriators or limiting appropriation rights of existing users is nontrivial (but not necessarily impossible) and the yield of the resource system is subtractable' (Ostrom *et al.* 1994:4). As used by Ostrom, the term appropriator applies to all individuals who extract or use resource units from any kind of CPR, and shall be used for the purpose of this thesis.

According to Ostrom *et al.* (1994), there are four types of goods arraying attributes of exclusion and subtractability. The attribute of exclusion may be defined as the provided good (natural or man-made) that individual value differs in terms of how easy or costly it is to exclude or limit appropriators from consuming them (Ostrom *et al.* 1994). As is shown in Figure VIII below, CPRs are goods that have difficult exclusion and a high subtractability of resource units. In the case of forests, the sheer area of a forest makes it unthinkable to fence it in, for example. Another example related to reduction of exclusion can be controlling the appropriators, defining of boundaries, and so on.

		SUBTRACTABILITY	
		LOW	HIGH
EXCLUSION	DIFFICULT	Public Goods	*Common-Pool Resources*
	EASY	Toll Goods	Private Goods

FIGURE VIII A General Classification of goods
(Ostrom *et al.* 1994:7)

Subtractability and *exclusion* are two attributes that are used to identify CPRs, but once a CPR is identified, it ought to be classified: 'CPR problems can be usefully clustered into two broad types: appropriation and provision' (Ostrom *et al.* 1994:9). Appropriation problems circumference the production relationship between yield produced from the CPR and the level of inputs required to produce that specific yield. Thus, the flow aspect of the CPR is what is the source of the challenge. However, provision problems are related to creating a resource, maintaining or improving the production capabilities of the resource, or avoiding the destruction of the resource. Thus, the resource stock or availability of the CPR is the core of the challenge in provision problems (Ostrom *et al.* 1994).

Thus, rainforests are CPRs classified as provisional; the maintenance and improvement of current exploitation and overuse of the rainforests, in addition to rainforest conservation and preservation, is important to maintain current resource stocks. The maintenance of these stocks will, in turn, ensure a minimizing effect on carbon dioxide emissions in the long run. However, although this is in the interests of the global society, CPR dilemmas pose a challenge:

> *'Individuals jointly providing and/or appropriating from CPRs are thought by many analysts to face a universally tragic situation in which their individual rationality leads to an outcome that is not rational from the perspective of the group. When this actually occurs, we call the behavioral result a CPR dilemma.'* (Ostrom *et al.* 1994:15)

Although the CPR dilemma is somewhat similar to Hardins *Tragedy of the Commons*, Ostrom (1990) does not believe in an inevitable tragedy due to the fundamental similarity that all global CPR settings share, i.e. that all CPR settings face uncertain and complex environments. Despite global dilemmas and the numerous differences that exist amongst the various global CPR settings, this one similarity is what makes it possible to group the CPRs. Although the environments are complex, the populations in CPR locations have remained stable over periods of time by binding themselves to their land. And in sharing a past with their environment, these populations expect to share a future through the inheritance of land by their children and grandchildren (Ostrom 1990). From the contextual setting to the institutional setting and from the political to the cultural setting, all CPR management cases are unique. The differences make it impossible to lay down ground operational rules for the management of CPRs because each case differs from another. Thus, Ostrom (1990) sets seven principles that characterize CPR institutions and an eighth that is used in larger complex cases.

The following table illustrates Ostrom´s design principles for CPR institutions:

Design Principles illustrated by long-enduring CPR institutions (Ostrom 1990:90) **Table IV**
1. *'Clearly defined boundaries:* Individuals or households who have rights to withdraw resource units from the CPR must be clearly defined, as must the boundaries of the CPR itself.
2. *Congruence between appropriation and provision rules and local conditions:* Appropriation rules restricting time, place, technology, and/or quantity of resource units are related to local conditions and to provision rules requiring labor, material, and/or money.
3. *Collective-choice arrangements:* Most individuals affected by the operational rules can participate in modifying the operational rules.
4. *Monitoring:* Monitors, who actively audit CPR conditions and appropriator behavior, are accountable to the appropriators or are the appropriators.
5. *Graduated sanctions:* Appropriators who violate operational rules are likely to be assessed graduated sanctions (depending on the seriousness and context of the offense) by other appropriators, by officials accountable to these appropriators, or by both.
6. *Conflict-resolution mechanisms:* Users and their officials have rapid access to low-cost, local arenas to resolve conflict among users or between users and officials.
7. *Minimal recognition of rights to organize:* The rights of users to appropriators to devise their own institutions are not challenged by external governmental authorities.
8. *Nested enterprises* **(for CPRs that are parts of larger systems):** Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises.'

What is meant by design principles is 'an essential element or condition that helps to account for the success of these institutions in sustaining the CPRs and gaining the compliance of generation after generation of appropriators to the rules in use' (Ostrom 1990:90). However, Ostrom specifies that she is not willing to argue that these principles are necessary conditions for achieving institutional success within CPR settings. That said, the principles presented in the table address factors that are linked to issues of social capital. The precision of individual and household rights and participation, sanctions towards individuals or aggregate individuals for violation of trust and mutual respect, and the suggestion of complex social networks through nested enterprises are a few examples of the importance of social and human capital that Ostrom mentions. The following example of CPR management in Nepal illustrates how unsuccessful forest management schemes may be converted to effective management systems through good governance.

Common-Pool Resource Management in Nepal

Through effective CPR management forest communities may actively participate in the successful management of common-pool resources. A sense of positive collective action also improves social capital through mutual trust between the actors involved.

In its initial efforts of systematically centralizing forest management in Nepal, the government in 1957 nationalized all forests (Agarwal & Ostrom 2001). Unfortunately, the assertion of control at the time was employed through measures through which the government tried to dominate the use rights of rural forest residents. There was a clear lack of effective monitoring and enforcing system at that time which led to the undermining of existing local systems of management. This further led to widespread deforestation as forest communities started viewing forests as state property instead of their own. Due to the lack of an ownership feeling, the overuse of the forest by forest-dependent communities came about as a lack of respect for that which was only state-owned.

'The overwhelming evidence on deforestation showed that the existing policy needed rethinking' (Agarwal & Ostrom 2001:499). The Nepalese government began taking steps towards good governance of forests in 1970. The pace of reforms began taking a better form after the adoption of the Master Plan for the Forestry Sector in 1989, the Forest Act in 1993, and new Forest Regulations of 1995 (Agarwal & Ostrom 2001). In the implementation of these three new legislations between 1989 and 1995, the Nepalese government introduced fair and legal frameworks that encouraged empowerment through self-governance in rural forest communities.

'By 1999, the new legislation had led to the formation of 8,500 community forest user groups comprising nearly a million households' (Agarwal & Ostrom 2001:500). These groups were responsible for managing more than 6,200 square kilometers of forest area, which sums up to approximately ten percent of the total forest are of Nepal. It is important to note that unofficial estimates of these numbers are higher. New user groups are being formed at an impressive rate of nearly 2,000 per annum which are now active in seventy-four of seventy-five district in Nepal (Agarwal & Ostrom 2001).

'Today Nepal is often seen as a leader among developing countries in setting conservation goals and priorities and in creating progressive programs and legislation related to resource management and conservation' (Agarwal & Ostrom 2001:499). The major objective of the

new legislation is, in addition to providing forests to willing community groups, to establish and promote community plantations in open and degraded areas. Community user group members (identified by the District Forest Officers) prepare their own constitutions that govern day-to-day functioning and management, thus playing a direct role in preparing and implementing the plan (Agarwal & Ostrom 2001). Areas of national forest assigned to a user group in the form of a community forest entitle the group to develop, conserve, use and manage the forest. In addition, these groups are allowed to sell and distribute forest products by independently fixing prices in the market, thus generating revenue. These revenues are not taxed. However, user groups 'are required to spend twenty-five percent of all cash income on collective development activities' (Agarwal & Ostrom 2001:500), thus, re-investing a fourth of their revenues back into their respective communities in order to build social capital.

In managing the forest, executive committees of approximately ten to fifteen members (elected by general membership of the forest user groups) undertake everyday tasks associated with the management of the community forest. 'These tasks include protection of the forest (either directly or by a guard the committees appoint), allocation of benefits from the forest, steps to improve the condition of vegetation cover, and sanctioning rule breakers' (Agarwal & Ostrom 2001:500).

Adopting legislations that include local forest-dependent communities in the Middle Himalaya in Nepal, the government has successfully managed to implement CPR management by adopting Ostrom´s (1990) design principles. With clearly defined boundaries and congruence between appropriation and provision rules that local participants are involved in making and implementing, the government has assigned ownership of the management scheme to those that depend most on the commons. Monitoring activities are also assigned to local participants who sanction rule breakers and have local conflict-resolution mechanisms. 'The nature of property rights that community forest user groups have received places them in the category of proprietors (…) able to use all the product from their forests, buy and sell in markets, manage how the forest is to be used, and finally, create collective choice level rules that affect the nature of management' (Agarwal & Ostrom 2001:500).

CPR management, when effectively carried out, not only empowers rural forest-dependent communities to self-govern themselves and their forests but also builds social capital through good governance. Successful CPR management redefines the roles of the actors within the collective in any given nation thus leading to positive relationships of mutual trust and respect, building social capital not only at a local level, but also a national level.

IV.III Social Capital

The concept of social capital found its way to the academic spotlight in the late 1970s-early 1980s. Pierre Bourdieu defined social capital as:

> *'the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition'* (Bourdieu 1985:248, as cited in Portes 1998).

Coleman (1998:98) defines social capital by its function, stating that social capital 'is not a single entity but a variety of entities, with two elements in common:

- *They all consist of some aspect of social structures, and*

- *They facilitate certain actions of actors – whether persons or corporate actors – within the structure.'*

Coleman states that 'social capital is productive' (Coleman 1988:98). What is meant here is that the concept of social capital bears with it the aspect of relations between actors and among them. And in doing so, he highlights that the relations between actors is what determines the relation amongst them. In being the first to state that 'social capital comes through changes in the relations among persons that bring about skills and capabilities that make them able to act in new ways' (Coleman 1988:100), he made an important link between social capital and human capital. In comparing human capital to physical capital, Coleman (1988:100) states the following: 'just as physical capital is created by changes in materials to form tools that facilitate production, human capital is created by changes in persons that bring about skills and capabilities that make them able to act in new ways'. These two definitions point out Coleman´s thoughts on the importance of human capital in the building of social capital. The tangibility of the different forms of capital presented in Coleman´s (1988) article are shown in the following figure:
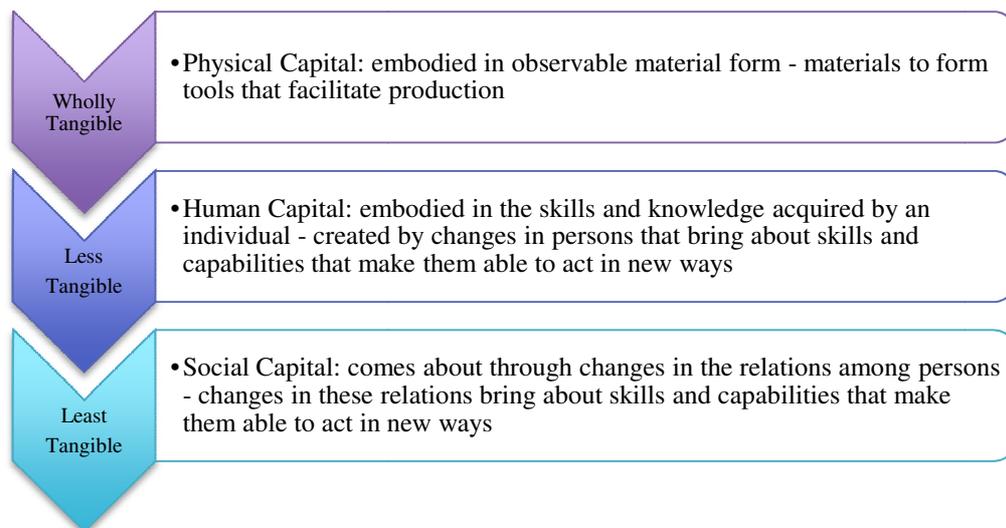
Model based on Coleman (1988:100)
FIGURE I**X**

However, although social capital is the least tangible, one must refrain from directly relating its complexity to the level of its tangibility. The complex dimensions of social capital are that the actors in each environment differ from one another, as do the actors within the same structure. In contrast to Bourdieu, Coleman´s fundamental base for social capital is that of trustworthiness and depends on two elements:

1. *'Trustworthiness of the social environment, which means that obligations will be repaid, and*
2. *The actual extent of obligations held'* (Coleman 1988:102).

The term social capital, thus, entails the importance of social bonds and norms as a basis for sustainable livelihoods. Whilst lowering the costs of working together, social capital also facilitates cooperation (Pretty & Ward 2001). Cooperation within actors in any environment

may be defined as a form of social network. 'It is a recognized fact in socioeconomic research that social networks create social capital of importance for business development' (Kristiansen 2004:1150).

Social Networks

An attribute created in the interaction between people, social capital increases the strength and value of personal qualities such as intelligence and work experience, and represents a resource for collective as well as individual action (Coleman 1998, as cited in Kristiansen 2004). Lin (1999, as cited in Kristiansen 2004:1150) states that 'the value of a person´s social capital is determined by qualities of her or his social network'. However, Kristiansen himself argues that the determination of a social network is based on an initial level of social capital. The universal question of 'which came first - chicken or egg' can be depicted here, however, the intention of mentioning the two views in this setting is to point out the complex web of social capital. As Kristiansen (2004:1150) defines:

> *'A social network consists of a series of formal and informal ties between the central actor and other actors in a circle of acquaintances'.*

The formal and informal ties between actors that Kristiansen (2004) states in his definition may be placed side by side with Coleman´s (1998) social structures and actions of actors, thus stressing the importance of social capital in the building of social networks.

Kristiansen (2004) distinguishes social and personal networks from other networks such as professional networks, inter-firm cooperation and business linkages; in that social and personal networks are informal and have the ability to raise individual social capital. These networks differ greatly and are segregated by ethnicity and levels of education, amongst other factors (Kristiansen 2004). In his model showing the *interplay between subcultural characteristics, social networks, and entrepreneurial resources*, Kristiansen (2004) displays the important factors of subcultural characteristics and entrepreneurial resources that play a significant role in the quality of a social network. The quality of a social network is based on the influences of four significant characteristics:

1. *Number of relations*: the number of social relations determines the network size and has an obvious importance in the development of social capital and entrepreneurial resources,

2. *Strength of ties*: the strength or the reliability of the relations between actors has an important impact on trust in business relations. Emotional intensity, the degree of trust and acquaintance between the parts, frequency in interaction, and the period in which a relationship has lasted are criteria that may be used to measure the strength of ties between actors,

3. *Variety or diversity*: the importance of variety in the information available to actors provides access to new information from various sources (mainly actors in different social positions),

4. *Network dynamics*: the frequency of tie formation and dissolution determines the flexibility and dynamics of a social network. (Kristiansen 2004)

Entrepreneurial resources are vital in the build-up of small-scale entrepreneurship in developing countries. A creative business process with three distinct resource stages is a prerequisite for the entrepreneur to succeed, and these resources may be supplied through social networks:

1. *Strengthening of attitudes through values and motivation*: a required level of individual confidence comes about through persons and institutions that motivate individuals or aggregate communities to search for new ideas in order to attain higher incomes. The strength of the values and motivation of the individual(s) involved is highly determinant of the success of the business opportunity,

2. *Picking opportunities through ideas, capital, information, and markets*: access to markets for information, and capital through credit schemes is an important aspect of expanding an entrepreneurial idea. Financial constraints and lack of information are drawbacks to the success of any business opportunity, however, the emphasis placed on access to information places this factor as far more important than access to capital,

3. *Navigating obstacles through bureaucratic goodwill and trust*: barriers created by laws and regulations, bureaucratic and judicial structures, and taxes and levies are plentiful and unnecessary obstacles for actors pursuing business opportunities. Widespread corruption in certain developing countries causes extra transaction costs for small-scale business actors, limiting the extent of business contacts and social network build-up. This lack of trust reduces opportunities of entrepreneurs to enter communities of trust that ultimately is a prerequisite for success. (Kristiansen 2004)

In his model, Kristiansen (2004) takes into account the aspect of subcultural characteristics that are specific to respective areas. These subcultural characteristics are ethnic resources and a form of social capital through knowledge and behavior. Group cohesion, mobility, and the level of education in a given setting are defined as socio-cultural and demographic features of a group that co-ethnic entrepreneurs may actively utilize in collaboration (Light & Karageorgis 1994, as cited in Kristiansen 2004). Although Kristiansen (2004) writes with a contextual setting in Tanzania, his model on the *interplay between subcultural characteristics, social networks, and entrepreneurial resources* may be employed in numerous settings worldwide where minority subcultures, for example, struggle with poverty due to a lack of social capital and social networks in addition to corrupt actors who hinder development. Coleman´s (1988) fundamental base of trustworthiness for the successful build-up of social capital and Kristiansen´s (2004) link between social capital, social networks, and trust highlights the non-tangible aspect of the complexity of social capital.

Rothstein (2005) divides social capital and looks at the two dimensions of the concept. The term social capital consists of two words: *social* and *capital*. The term *social* indicates that the concept defines relationships between individuals and the term *capital* constitutes the idea of an asset for the actor(s) that possess social capital. The fact that actors possess this asset enables them to accomplish things that they would otherwise not be able to achieve. The two dimensions presented by Rothstein are that of a quantitative and qualitative nature where the quantitative dimension refers to the number of social contacts an individual has. 'The more social networks to which an individual has access, and the more extensive those social

networks are, the more social capital she has' (Rothstein 2005:65). However, the quantitative dimension alone is not adequate to define social capital. The qualitative dimension refers to the nature of the number of contacts that an actor has. Rothstein precisely states that an untrustworthy contact cannot be an asset. He concludes by stating that:

> *'on the individual level, social capital is the sum of the number of social contacts multiplied by the quality of trust in these relationships (…) at the aggregate level, the amount of social capital is determined by (a) the extent of social contacts and networks that the people have on average and (b) the extent to which people generally believe that they can trust most of those contacts'* (Rothstein 2005:66).

In continuing Coleman´s (1988) and Kristiansen´s (2004) presentation on the importance of trust within the concept of social capital, Rothstein´s (2005) research on social traps and the problem of trust captures the essence of the dynamics around trust.

The following brief example of community cooperatives in indigenous communities of Papua Barat illustrates how certain initiatives bring about an increase social capital through the use of social networks.

Kopermas – Community Cooperatives of indigenous communities in Papua Barat, Indonesia

After the passing of Law No.22/1999 on Decentralization in Indonesia and Special Autonomy in Papua Barat, customary communities hoped to gain benefits from the forestry sector, both from returns from regional revenue and from direct contributions to community livelihoods. Decentralization allowed local governments to alter policies and thus grant forestry concessions to community cooperatives, better known as *kopermas (koperasi peran serta Masyarakat)*, for the first time in the history of Papua Barat. 'A kopermas cooperative is a cooperative enterprise established to fulfill the livelihood needs and development aspirations of local communities by exercising their land rights to benefit from their own natural resources' (Office of Cooperatives and Small and Medium-Sized Enterprises 2002, as cited in Tokede *et al.* 2005:3).

'This paradigm shift gave communities with indigenous rights greater opportunities to become involved in managing their forests' (Tokede *et al.* 2005:2). In addition, Law 41/1999 on Forestry formed the legal basis of local community acknowledgement. The law also acknowledged *hak ulayat* (customary land rights) and the rights of *masyarakat adat* (customary communities) of indigenous peoples to benefit from local natural resources on their land.

'The provincial government responded positively to the recognition of customary communities´ rights (…and) its first action was to issue a Governor´s Decree on The Rights of Customary Communities to Harvest Forest Products, better known as IPK-MA (*Ijin Pemungutan Kayu oleh Masyarakat Adat*), Timber Logging Permit for Customary Communities' (Tokede *et al.* 2005:3). In addition the Governer´s Decree, *masyarakat adat* would be legally recognized 'if they formed a *Lembaga Masyarakat Hukum Adat* (LMHA) or a Customary Community Organization or were formally affiliated with a legally constituted Community Cooperative' (Tokede *et al.* 2005:3).

The enforcement of these decentralization initiatives caused indigenous communities of Papua Barat to act collectively for their own social and economic benefits. Not only did the *masyarakat adat* have to organize their villages internally in order to establish a village cooperative, but they also had to collaborate with state-owned timber companies, other concession holders, and private investors. This form of collaboration extended the social networks of the *masyarakat adat* both at a village level and business level through which some community groups have managed to secure better deals for themselves (Tokede *et al.* 2005).

The case thus illustrates how indigenous peoples in Papua Barat made the active choice of using their prior knowledge and subcultural characteristics as an opportunity to enhance their social capital through economic and social benefits. *Kopermas* expanded the social networks of the *masyarakat adat* at both local and business levels. In order to have a successful cooperative, indigenous peoples needed to firstly, trust one another and secondly, create alliances with third party business partners of governmental and nongovernmental nature. In being able to trust one another, the *masyarakat adat* managed to establish successful cooperatives which also was a result of extended social networks.

IV.IV Trust and Collective Action

The bond between trust and collective action is such that without trust, the possibility of collective action is highly unlikely. Collective action is the act of individual actors joining together in order to create an aggregate of actors aiming to achieve a common goal. The focus of this act is not the fact that numerous individuals have a common goal, but rather the fact that they choose to form a group in order to achieve the goal. A prerequisite for this action is that the individual actors trust one another. Trust is the *glue* that binds each individual actor to another within the formed group.

Trust may be defined as 'an individual´s belief in, and willingness to act on the basis of the words, actions, and decisions of another' (McAllister 1995:25, Lewicki, McAllister, & Bies 1998:440, as cited in Lewicki 2006:94). When compared to Rothstein´s (2005) second determinant with regards to social capital on an aggregate level, the common standpoint is that of any individual´s willingness to act based on how the same individual(s) perceives another actor´s behavior and intentions.

Worchel (1979, as cited in Lewicki 2006) suggests that there are different perspectives on trust and that these perspectives can be categorized in at least three groups:

1. *Individual personality differences in the willingness to trust*: at this level, the individual´s difference in the readiness to trust is the focus. These differences originate in early psychosocial development and form individual attitudes towards trust as a conceptualized belief, expectancy or feelings of trust deeply rooted in an individual.

2. *Trust as an institutional phenomenon*: at this level, trust is analyzed within and among institutions and as to how individuals place their trust into these institutions.

3. *Transactions between actors who create or destroy trust at the interpersonal and*

group levels: at this level, trust is defined as the expectations of another acting party, eventual risks associated with assuming and/or acting on these expectations, and finally, contextual factors that affect the enhancement or inhibit development and maintenance of the relationship. (Lewicki 2006)

The definitions and perspectives of trust state clearly as to how the element of trust within relationships is not something that can be isolated alone to individuals per say, but is also a result of a history between actors and expectations from actors. This interplay brings about the complexity of the role of trust within social networks, not to mention its importance in supporting cooperation. In not trusting, actors have confident negative expectations (Lewicki 2006) of other actors, i.e. distrust.

Social Traps

A situation where, due to a lack of social capital, individuals acting independently or within the intermediation of an organization are unable to cooperate to achieve joint benefits that exceed individual short-term benefits, although cooperation would benefit all actors involved, is called a *social trap* (Rothstein 2005). This lack of cooperation comes about due to a mutual distrust. Origins of the concept of the social trap came about first in the 1970s as psychologist John Platt termed social traps as an 'umbrella term' for numerous situations in which social actors find themselves. Finding themselves in different situations, individuals act according to how they think other actors in their milieu will behave (Rothstein 2005).

In illustrating the dimensions of the social trap, Rothstein (2005) lays down four fundamental foundations in the logic of the social trap:

1. The central difference between *individual and collective rationality* reveals that individuals, when using their personal rationality may act in ways that do not necessarily benefit the collective.

2. It is necessary to presume that political and economic actions are strategic. This means that *the actions of people depend on what they think that others are going to do*.

3. The *social context* plays a very significant role with regards to the way in which individuals act.

4. Actors´ possibilities of getting out of a social trap is limited due to the fact that one *cannot rationally decide to forget*.

The social trap, thus, metaphorically indicates that the memory is something that we cannot make rational decisions about (Rothstein 2005). In addition, the complexity of historical contexts makes the trap a very serious and difficult social problem. Although social scientific theory underlines how individuals will always act with their own utility maximization in mind, individual actions cannot be analyzed without the social context borne in mind. Unfortunately, given certain social contexts, it may be more rationale for an actor to opt for non-cooperation if (s)he, in using their personal rationality, find that they distrust other actors to non-cooperate. 'Trust or non-trust in *the others* is (…) often historically and/or politically determined by the collective memory' (Rothstein 2005:13).

Rothstein´s reasoning for choosing the metaphor of a social trap has two elements in it.

Firstly, due to the fact that individuals in a given situation where two choices of cooperation or non-cooperation are present may end up preferring a choice that is most disadvantageous for all parts involved. Secondly, the choice of terminology, i.e. the term *trap*, in the metaphor represents the sad fact that once a group of actors has entered the trap, it is usually extremely difficult to escape. (Rothstein 2005)

'The theory about social traps allows us to link two approaches in the social sciences that are usually widely disparate: those which stress the importance of historically established *social and cultural institutions and norms,* and those which emphasize the importance of *human strategic actions and choices*' (Rothstein 2005:14). Ostrom (1998, as cited in Rothstein 2005) goes further by stating that the social trap is a type of a meta-problem under which numerous important social and organizational issues can be categorized.

As Fukuyama (1995) states, all (economic) activity must be carried out through social cooperation. He highlights that it is extremely difficult for an individual to succeed without that which he calls a moral community, that is, 'an unwritten set of ethical rules or norms that serve as the basis of social trust' (1995:90). Although one may rely on their immediate family, Fukuyama precisely mentions that 'the most important form of sociability from an economic standpoint is the ability of strangers to trust one another and work together in new and flexible forms of organization' (1995:91).

Collective Action

The Logic of Collective Action was developed by Mancur Olson in 1965 and challenges the presumption that the possibility of a benefit for any aggregate actors would be enough motivation to generate collective action. According to Olson (1965), individuals refrain from acting in ways that would benefit the collective group, even when given the choice to do so. This is due to the fact that economic incentives are not the only incentives that motivate actors. Personal, social, and psychological incentives, such as prestige or friendship, may be prioritized in given contexts:

> 'unless the number of individuals is quite small, or unless there is coercion or some other special device to make individuals act in their common interest, rational, self-interested individuals will not act to achieve their common or group interests' (Olson 1965:2).

According to Ostrom (1990), Olson´s argument is based on the fact that an actor that cannot be excluded from enjoying the benefits of a collective good (once that good is produced), has little incentive to contribute voluntarily to the collective action required to produce the good. In the specific event of aggregate management of CPRs, for example, strong collective action and self-governing mechanisms, as well as high degrees of social capital on the part of the stakeholders is required (Ostrom 1990) in order to enhance positive collective action. This requirement will ensure sustainability, not only of the management scheme, but also of social capital build-up within local collectives who are major stakeholders in the concept of global collective action. The following example illustrates how Joint Forest Management in India brought about successful collective action.

Joint Forest Management in Kumaon, India

An example of successful aggregate collective action within forestry management is a case of Joint Forest Management in India. In the three districts of Kumaon: Nainital, Almora, and Pithoragarh, nearly 3,000 forest councils formally manage and control approximately a quarter of the forests. Through elected forest councils, rural residents possess substantial powers to create concrete restrictions in order to prevent certain types of forest use in addition to facilitating other types of forests. The villagers may raise revenues only through certain limited sources whilst ensuring that any conflicts that arise due to this are resolved through established legal procedures. Collectively, the Forest Council Rules are more of a framework for forest management rather than a defined set of work rules. This short description 'of the rights to forest management in Kumaon shows that the rural residents of Kumaon not only have the rights to access and use local forests but also can exercise claimant and proprietor rights' (Agarwal & Ostrom 2001:495).

'Joint Forest Management, with its objective of better management of forests through cooperation between the Forest Department and Village communities, marks an important shift in the strategy of environmental conservation in India' (Agarwarl & Ostrom 2001:497). The limited success of the Forest Department´s sole involvement in forest protection is one of the main reasons why the Indian central government has been willing to accept communities into the management process. The National Forest Policy of 1988 and the Government of India policy instructions of 1990 are the formal instruments that launched the Joint Forest Management programme (Agarwarl & Ostrom 2001). Successful cases from states such as Bengal, Madhya Pradesh, and Gujarat display how the government´s trust in the rural communities has led to positive collection action. 'By 2000, 25 of India´s 28 states had passed resolutions to encourage the setting of village-level forest protection committees' (Agarwal & Ostrom 2001:497). The programme has led to a nationwide alteration in the relationship between the state and village residents where trust between the actors has been a vital aspect for the success of collective action within Joint Forest Management. The programme has empowered rural communities to self-govern their respective forest areas and illustrates a shift towards good governance on the part of the Indian government.

IV.V Empowerment by Self-Governance & Good Governance

Collective action that increases social capital and bridges gaps between local communities and institutions is necessary in order for the development of situations in rural areas, but also for the improvement of government institutions and third-party organizations. However, these actions ought not only to be a form of short-term collaboration. In order to build lasting 'bridges', collective actions and joint organization must be sustainable.

Sustainability

As stated in the 1987 Report of the World Commission on Environment & Development: *Our Common Future*, '*sustainable development* is development that meets the needs of the present

without compromising the ability of future generations to meet their own needs' (UN 1987:1). This definition bears with it two key concepts:

1. *The concept of 'needs' refers to the essential needs of the not-so-fortunate members of our global community and to which utmost priority should be given; and*

2. *Limitations should be presented by the state of technology and social organizations with regards to environmental constraints of meeting present and future needs.* (UN 1987)

The concept of sustainability involves economic and social development with a focus on less fortunate communities of the world and future generations. Sustainability is also concerned with the misuse of the environment in order to gain benefits of economic and social nature. Individual as well as aggregate actors must be motivated to take into consideration the effects of development on the environment. This is only possible through a global collective action whereby international and national political institutions and organizations support the importance of social capital and networking within communities at a local level. However, not only is the support of institutions of major importance; local communities need to be empowered to make choices and carry out actions to produce results.

Empowerment

Empowerment provides individuals with the freedom of choice whereby actors make choices and act in ways that will improve their lives through interaction and collaboration with other actors. Although perception of empowerment differ from one specific context to another, due to cultural, political, and social factors, the following definition of empowerment will be employed for the purpose of this thesis:

> *'Empowerment is the process of enhancing the capacity of individuals or groups to make choices and to transform those choices into desired actions and outcomes. Central to this process are actions that both build individual and collective assets, and improve the efficiency and fairness of the organizational and institutional context which govern the use of these assets.'* (World Bank 2010:1)

The World Bank (2010) adds that there are four key elements of empowerment, namely; access to information, inclusion and participation, accountability, and local organizational capacity. These four elements intertwine and add to the concept of empowerment. Firstly, access to information enables citizens to be better informed of opportunities and services whereby fundamental choices for bettering livelihood situations can be made. In addition, access to information includes these actors in decision-making with regards to actions carried out in respective local areas. In including local actors through participation, empowerment enables them to have authority and control over resources in their given area. The advantages of empowering local communities are that they too can then be held accountable for choices that they make and actions that they deem necessary. Local organizational capacity refers to the social capital and knowledge that local communities already possess. Their ability to work together and organize themselves in order to solve challenges and concerns may be informal, but are essential assets with regards to the value of their empowerment. This form of self-governance is vital when opening up for collaboration with local community actors.

Self-Governance

'*Self-governance* is the ability of people to exercise and control the prerogatives of rulership in a society, requiring both knowledge and will on the one hand, and supporting and consistent institutional arrangements on the other hand' (Hess & Ostrom 2007:352). It is a result of collective action, knowledge, and the willingness to participate of actors that can bring about successful methods of self-reliance. However, it is important to note that the efficiency of self-governance also depends on the support received from relevant institutions and organizations. *Institutions* is defined by Ostrom (1986, as cited in 1990) as:

> '*The sets of working rules that are used to determine who is eligible to make decisions in some arena, what actions are allowed or constrained, what aggregation rules will be used, what procedures must be followed, what information must or must not be provided, and what payoffs will be assigned to individuals dependent on their actions*' (Ostrom 1986, as cited in Ostrom 1990:51).

Although empowerment and self-governance at the local level are key factors in ensuring collaboration between different actors, it is important to recognize the interdependence that actors have on each other in all aspects of life. It is only through this interdependence that larger goals can be reached. The interdependence of actors to one another is vital and can be used to build trust and achieve collective action through good governance.

Good Governance

Good governance addresses formal and informal actors and structures of both governmental and non-governmental nature that affect governance; and is a process of decision-making through which decisions are implemented or not implemented (UNESCAP 2010; Wøien 2008). This form of governance takes into consideration also the views of the less fortunate communities of the globe and has eight characteristics:

FIGURE X Characteristics of Good Governance
(UNESCAP 2010)

The participatory characteristic specifies the inclusion of opinions of both genders that are informed individuals. The precondition for this characteristic is that all actors are open and

willing to participate by organized and direct participation through legitimate institutions or representatives. Consensus-oriented governance refers to addressing different interests with optimal results for the collective in focus. In doing so, actors must have an understanding of the historical, cultural, and social contexts of a respective society. Accountability is a key requirement of good governance. All actors must be responsible for their role within the society and organizations are accountable for informing those that will be affected by decisions made. Transparency implies that rules and regulations are followed with regards to decision-making. In being responsive, all stakeholder interests must be addressed within a reasonable timeframe. This is also linked to a sense of effectiveness and efficiency. Results that address the needs of society ought to be supplied by the responsible use of available resources and to the best of abilities. In being equitable and inclusive, good governance ensures that all actors and organizations are equally involved in mainstream decision making. Finally, in following the rule of law, good governance must be able to implement fair and legal frameworks. A guaranteed protection of human rights and an impartial enforcement of laws should be carried out through incorruptible organs. As an ideal, good governance illustrates possibilities of governmental improvement, but can also be contextualized within organizations of a nongovernmental nature. The following example illustrates how the government of Mali is eager to include local communities in forest management programmes, as the communities also are stakeholders and good governance ought to include participation and ensure equity and inclusion.

Inclusive Community Forest Management in Mali

Although 'the rhetoric of community-based natural resource management gained a strong foothold in much of French West Africa during the late 1980s (…), it became increasing apparent that there were weaknesses in the strong centralized state of management of natural and plantation forests' (McLain 2001:196). The Traoré regime, in ending in 1992, created a vacuum in forest management as residents of rural areas unleashed their anger on forest service agents who tried to enforce national forest laws. This was due to the fact that the forest service had a reputation of being an arbitrary enforcer of laws that few rural residents understood and thus deemed inappropriate or unnecessary. However, after the fall of the dictatorship in 1991, community-based management accelerated rapidly. As efforts to bridge the gap between community and state got underway in the early 1990s, 'the topic of debate quickly became what constitutes a *local community* and therefore to whom management authorities would be shifted' (Painter 1993, as cited in McLain 2001:197). During this period, a variety of governmental and nongovernmental organizations of international and local nature were involved in transferring the rhetoric of *community involvement* into practice (McLain 2001).

Given the ecological and social realities of the Sahel (high variations in rainfall and plant productivity) rural inhabitants have survived for centuries by putting together whatever resources they have available for survival. The distances between the available resource is vast and thus, a majority of the rural communities have adopted a nomadic lifestyle. 'Over the course of the year many types of migrants pass through central Malian forests, harvesting a variety of resources and occupying space in diverse ways and for varying lengths of time' (McLain 2001:198). Certain migratory groups such as the Fulani transhumant cattle herders follow routes that are more or less regular from wet season to dry season. They are the best-known example of migrant users of forest resources in Mali. 'In many areas their claims to forests as browsing sites for livestock and as camping and watering points for themselves and their animals predate by centuries claims by many sedentary agricultural villages to those

same resources' (McLain 2001:198). However, the Fulani are not the only community who migrate within ancestral lands. Women from established rural communities travel to gather nuts and fruits on a seasonal basis. Woodcutters from villagers near and far travel to regional forests to cut firewood that is lumbered in the dry season. Due to this nature, 'even where migrant users rights to resources are not formally recognized, they may still have relatively secure informal usufruct claims to the resources they utilize' (McLain 2001:199). These claims are strong claims that are reinforced through kinship ties of migratory groups with community residents. Thus, the term *migrant forest user* 'encompasses a broad variety of mobility strategies associated with forest resource use' (McLain 2001:198).

The challenge with rural communities in Mali has been related to that of the migratory nature of rural populations, 'a diverse mix of resident and migrant users constitutes the norm for these forests' (McLain 2001:199). Strategies that bring migrant herders and other forest users to collaborate in community-based forest management have brought about useful discussions and decision-making venues:

1. *Participatory On-Site Research to Identify Migrant Users and Their Concerns*: it is not uncommon that rural inhabitants with a migratory nature often 'fall through cracks in forest management simply because their presence is ephemeral' (McLain 2001:199). In order to better understand the nature of these groups of people, researchers now travel the routes of migratory groups in order to correctly map interests and opinions with regards to forest management and common-pool resource use.

2. *Migrant User Group Presence in Management Councils*: in increasing opportunities for migrant forest user participation in crucial discussions, key meetings are held when migrant groups are in a respective area. Meetings are also held in various locations to ensure the inclusion of non-resident opinions.

3. *Making Information Available in Appropriate Formats and Languages*: in making information available for all rural community members, community-based forestry project staff ensures the presence of translators during forest management meetings. Informational radio broadcasts and audio material are produced and distributed in various languages.

4. *Importance of Key Players Who Understand and Respect Migrant Users*: 'Village leaders, acutely aware of their interdependence with herders, sometimes have insisted that herders be represented during meetings where forest management issues are discussed.

A change in the way of governance, inclusion of local community members in decision-making and other processes, collaboration within nongovernmental organizations and other institutions illustrates a positive change in governance of forests in Mali. The case also displays the difficulties related to numerous challenges entailing the concept of good governance. The challenge for forest-management advocates in Mali is that of the migratory nature of the rural communities. However, steps and measures that encourage local participation and empowerment are in place. In addition, involved nongovernmental organizations and governmental institutions are being responsive in defining actions by taking into consideration the differences within the respective rural groups.

The theories presented in this chapter, alongside the global examples given present the closely linked aspects of trust, governance, and social capital build-up. In applying these theories to the concept of REDD presented in Chapter III, the formation of a theoretical framework aids in illustrating how good governance and social-capital build-up strengthens the bonds of trust and how these three elements combined will result in sustainable implementation of REDD initiatives.

IV.VI Theoretical Framework

The theoretical framework illustrated in this section is based on the research and theories presented in this chapter and will be discussed in analyzing empirical data in Chapter VII. The aim of the framework is to present how trust can bridge the gap between government, nongovernmental institutions, and local people in order to effectively operate REDD initiatives.

TRUST:
- Collective Action

Governance:
- CPR Management
- Legal (property rights)
- Political
- Civil Societies

Social Capital:
- Networks
- Infrastructure
- Empowerment

SUSTAINABLE IMPLEMENTATION
OF REDD INITIATIVES
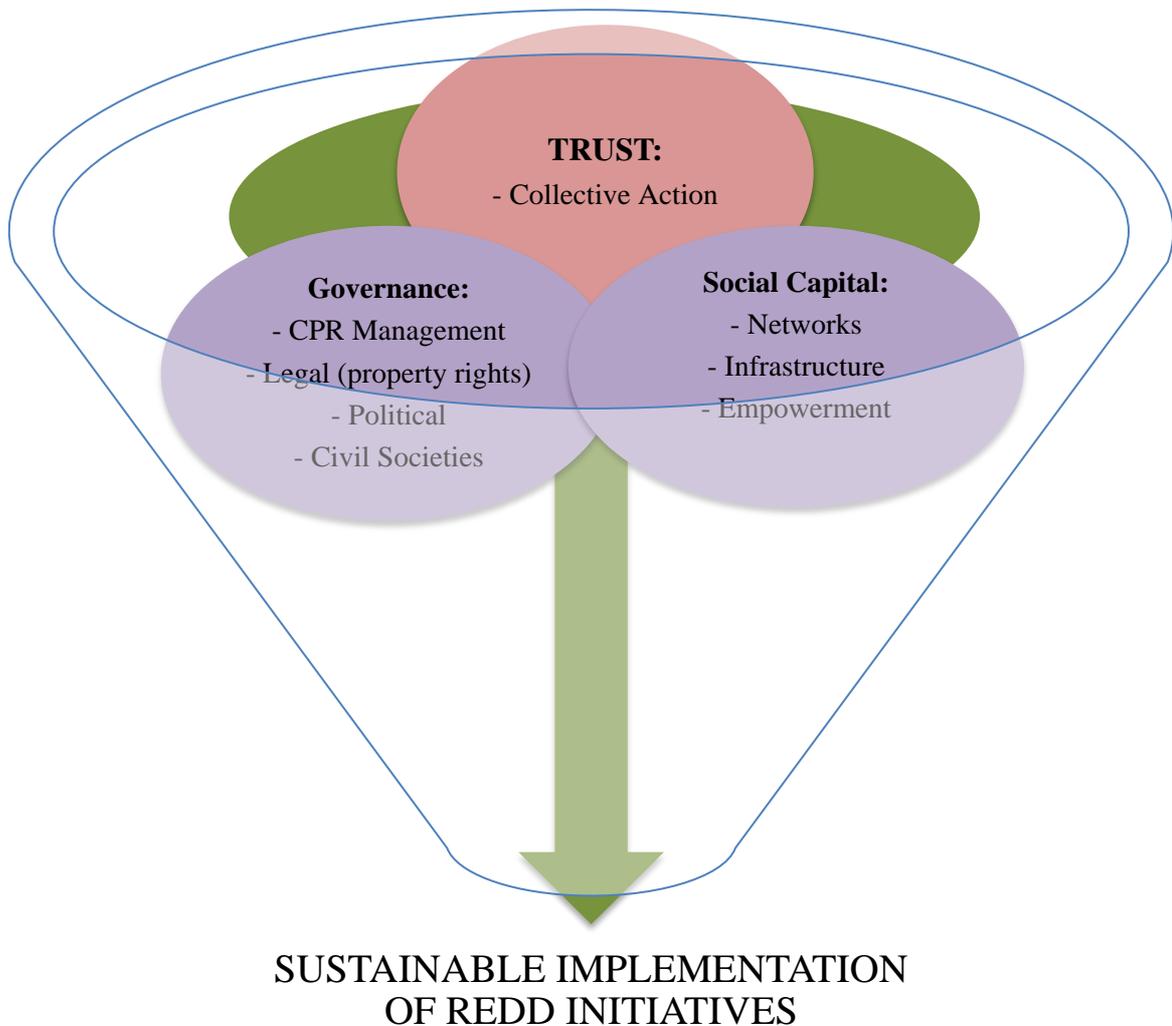
FIGURE XI

The framework illustrates how good governance and social capital build-up are interlocked with the issue of trust. Without a mutual trust between governmental and social actors, positive collective action cannot exist. Thus, the three elements of good governance, social capital, and trust must be grounded on a common platform in order to ensure sustainable implementation of REDD initiatives, as shown in the illustration above. The circle of trust is marked with a different color in order to symbolize it as a precondition for the successful implementation of REDD initiatives.

CHAPTER V

Methodology
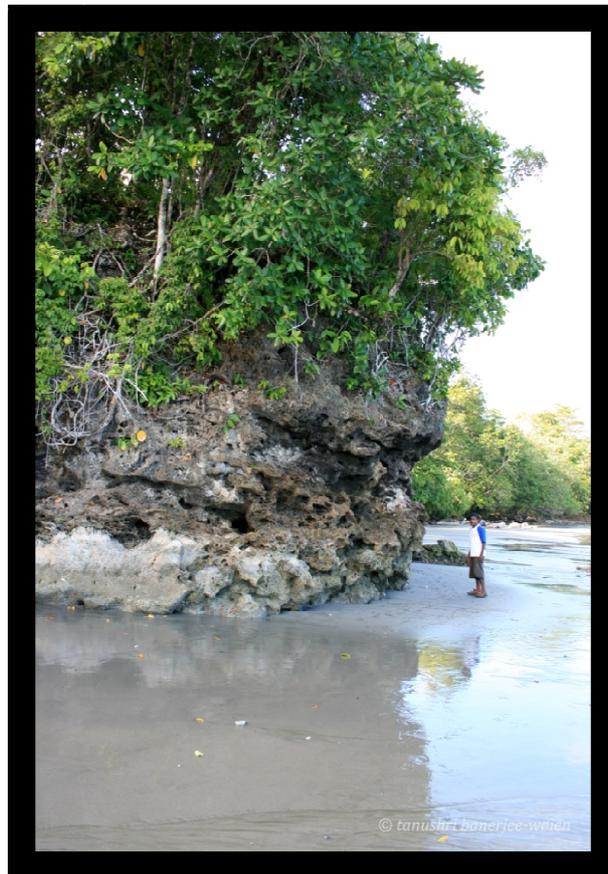
The purpose of this chapter is to introduce the methodology of the research carried out for this thesis. The chapter is divided into four sections. The first section briefly introduces research methodology and addresses the two approaches with regards to data collection in a given context, namely, quantitative and qualitative research. Section two describes further the attributes of qualitative research as this is the form of research adopted for this thesis. Data collection methods are highlighted in section three and research procedures carried out in the field are also outlined. Finally, section four briefly mentions the challenges with regards to conducting research in Papua Barat and how these challenges have affected the research for this thesis.

V.I Methodology

Methodology is defined as 'the choices we make about cases to study, methods of data gathering, forms of data analysis (…) in planning and executing a research study' (Silverman 2001, as cited in Reinfjord 2009:32). The research strategy that is used in a conducted study is shaped by the research method. The research method is generally chosen with the research aims and objectives in mind.

The two well-known methods within the field of research are that of quantitative and qualitative research. The type of data produced in a conducted study differs greatly with regards to which research method was adopted. Writers of methodology tend to distinguish between the research methods mentioned above, although there are those that state that differences between quantitative and qualitative research are no longer relevant (Bryman 2008). However, 'for many writers, quantitative and qualitative research differs with respect to their epistemological foundations' (Bryman 2008:22). *Epistemology* may be defined as 'a theory of knowledge (… that) refers to a stance on what should pass as acceptable knowledge' (Bryman 2008:693). Epistemological considerations include positivism, realism, and interpretivism.

The fundamental differences between quantitative and qualitative research methods involve the principal orientation with regards to the role of theory in relation to the research being conducted. While quantitative research has a deductive orientation where theories are tested through the research conducted, qualitative research has an inductive nature and theory is generated through the research conducted. The epistemological orientation of quantitative research is a natural science model, in particular positivism, advocating the application of the methods of the natural sciences to the study of social reality and beyond (Bryman 2008). Qualitative research has an epistemological orientation whereby 'a strategy that respects the differences between people and the objects of the natural sciences is required, thus requiring the social scientist to grasp the subjective meaning of social action' (Bryman 2008:16).

Ontology is 'a theory of the nature of social entities' (Bryman 2008:696), where the central point of orientation social entities ought to be considered as objective entities or whether they are built up of perceptions and actions of social actors (Bryman 2008). Whereas quantitative research has an objective ontological orientation, qualitative research entails a constructionist orientation whereby social phenomena are constantly being revised.

However, although quantitative and qualitative research represent different sets of research methods and strategies, it is not rare that one form of research may entail characteristics of the other type. Although each method 'carries with it striking differences in terms of the role of theory, epistemological issues, and ontological concerns, (…) the two can be combine within an overall research project' (Bryman 2008:23).

With the research aim and objectives (presented in Chapter I) in mind, the research method deemed most appropriate for the purpose of this study was that of qualitative research. In having an inductive nature, the qualitative research method would allow the researcher to collect data in order to address the research questions at hand.

V.II Qualitative Research Approach

Qualitative Research is 'a research strategy that usually emphasizes words rather than quantification in the collection and analysis of data' (Bryman 2008:366). Bryman´s definition of this type of research is a description of one aspect of the research method. According to Holland and Campbell (2005, as cited in Reinfjord 2009), qualitative research stresses the interpretive nature of knowledge construction, i.e. specifying the importance of different interpretations of the same reality. In doing so, qualitative research allows the researcher to set data within the appropriate social context.

'In qualitative research, theory is supposed to be an outcome of an investigation rather than something that precedes it' (Bryman 2008:369), thus the connection between theory and research are quite ambiguous with qualitative research studies. In addition, qualitative research has diverse methods with regards to data collection. The following are the main research methods of data collection related to qualitative research:
1. Participant observation (also known as ethnography),
2. Qualitative interviewing,
3. Focus groups
4. Language-based approaches, and
5. Collection and qualitative analysis of texts and documents (Bryman 2008).

For the purpose of this thesis, two types of qualitative research approaches were used, namely, qualitative interviewing and focus groups.

V.III Data Collection

Selection of Study Area

The selection of the study area of Papua Barat was suggested to the researcher as an option whereby one could research amongst indigenous peoples of Indonesia and focus on REDD initiatives at the same time. As both aspects of the suggested study were of interest, Papua Barat became the choice of study. In selecting the areas of Mokwam and Manokwari *Utara*, the researcher intended to collect data with regards to deforestation and degradation from two different areas, i.e. a village in an inland setting and villages in a coastal setting. By doing so, the researcher would be able to compare findings from two areas. Research was conducted in one village in the inland region and in several villages in the coastal area of Manokwari *Utara*. The reason for this was that inhabitants of Manokwari *Utara* were not readily available for interviewing purposes, as many of the inhabitants travel with regards to their work and are not at home during the day.

Interviewing

Interviewing within qualitative research is a process that tends to be less structured with an emphasis on generality. Generality is present within the interview process already from the formulation of initial research ideas stage to the interviewees´ own perspectives (Bryman

2008). This type of interviewing focus greatly on the respondents own perspectives and thus encourages the respondent to answer according to her/his own needs. Extra information that is gathered through the process gives new insight to the researcher with regards to different issues and may also open up for new arenas of research within the field. Thus, qualitative interviewing is flexible and the respondent is usually allowed to *lead the interview*. Detailed answers that may *stray* from the original question are common in qualitative interviews and allows the interviewer to also *depart* from an eventual interview schedule or guide that is being used (Bryman 2008). In the qualitative interviewing process, interviewees may be interviewed on more than one occasion.

A *focused interview* is 'a type of personal interview (following an interview guide) that specifies topics related to the research hypothesis and gives considerable liberty to the respondents to express their views (…) the interview focuses on the subject´s experiences regarding the situation under study' (Frankfort-Nachmias & Nachmias 2000:518). This type of interviewing is also referred to as *semi-structured interviews*, whereby 'the researcher has a list of questions or fairly specific topics to be covered, often referred to as an *interview guide*, but (nonetheless) the interviewee has a great deal of leeway in how to reply' (Bryman 2008:438). In this approach, questions may or may not be followed according to the interview guide and additional questions that are not stated in the guide may also be asked, in response to answers given by the respondent. Thus, the time in which qualitative interviews are carried out vary and due to the nature of the semi-structured interview, these types of interviews are often referred to as *in-depth interviews*.

For the purpose of this thesis, an interview guide was made and followed, although according to the respondent answers. Additional questions were also asked as a result of information that was given. The answers given by the respondents included social and psychological aspects where feelings were described and frustrations shown. Respondents answered to questions with regards to deforestation and forest degradation, but at the same time revealed details about their life situations in their respective areas. As in-depth interviews were carried out, the researcher did not place a *time limit* on each interview, but rather let the respondent decide as to how long he would speak and as to how much information he was willing to reveal. Thus, the number of interviews taken per day depended on the length of the interviews. The researcher limited working hours to a total of maximum 7,5 hours a day, as there was a need for a translator and the quality of translation may be affected due to long working days.

Sampling

Purposive sampling is a non-probability form of sampling, whereby respondents that are interviewed have relevance to the research questions that are being posed (Bryman 2008). In this type of sampling, the researcher interviews respondents with the research questions in mind. 'The purpose of sampling is usually to study a representative subsection of a precisely defined population in order to make inferences about the whole population' (Silverman 2005, as cited in Reinfjord 2009:35). For the purpose of this thesis, male respondents were interviewed as the research focus was on deforestation and forest degradation. Given the social settings of the research areas, male dominance quickly showed that women were rather involved in family chores rather than knowing of or being involved in deforestation. However, both women and men were interviewed in focus groups, as the focus group discussions were based on indigenous perceptions with regards to REDD.

Focus Group Discussions

A *focus group discussion* is 'a form of group interview in which there are several participants (…) and there is an emphasis in the questioning on a particular fairly tightly defined topic; and the emphasis is upon interaction within the group and the joint construction of meaning' (Bryman 2008:694). This technique allows the researcher to understand the collective reasons for feeling the way respondents do as the group respondents may question one another´s answers with regards to certain questions. 'The original idea for the focus group (or focused interview) was that people who were known to have had a certain experience could be interviewed in a relatively unstructured way about (a certain) experience' (Bryman 2008:475). Another advantage of such group discussions is that the focus group is a popular method by which the researcher can examine the ways in which people in conjunction with each other construe the general topics of the researchers interest (Bryman 2008).

Focus group discussions were carried out specifically defined topic, i.e. REDD. However, focus group discussions carried out in the field were not aimed only at so-called *experienced respondents* but also at respondents who could participate as *newcomers* who could contribute to REDD in the future. Women were also included in the focus group discussions and the main reason for this was to ensure female representation with regards to REDD initiatives that represented the possibility of an alternative livelihood for the future of indigenous peoples in Papua Barat.

The Interview Setting & Confidentiality of Respondents

It is of extreme importance that respondents feel comfortable and safe in the interview setting, as this may have an effect on the outcome of the interviews and thus on the reliability of the data collected. Interviews were conducted at the homes of the respondents or at a site of their choice. Focus group discussions were conducted in the area that was chosen by the group.

Due to the political tension in Papua Barat, the researcher´s main goal was to collect data whilst ensuring the confidentiality of the respondents. This was precisely mentioned during all individual interviews and the focus group interviews within the indigenous communities.

The names of interviewees associated with government offices and nongovernmental organizations are also kept confidential.

V.IV Research Challenges & Limitations

There were a number of factors in the field that caused challenges and also perhaps affected the extent to which data could be collected. Research challenges in Papua Barat begin with obtaining a research permit to conduct research in the province. Expensive and unreliable transport makes travel difficult and somewhat risky. Reaching research destinations that are difficult to access is a challenge. In addition, doing research in the fields of Papua Barat as a foreign woman has its own challenges, as elsewhere. Ones safety is important and finding reliable translators and guides to travel to the field has not been an easy task.

CHAPTER VI

Findings

The purpose of this chapter is to present the empirical findings of the research conducted in Manokwari, Papua Barat. The research conducted is based on the five research questions stated in Chapter I of the thesis and the findings are presented in compliance to these research questions. Individual opinions of the interviewed respondents within the communities are presented as direct quotes. The chapter is organized into five sections. The first section addresses the extent to which the indigenous peoples are dependent on the rainforest and how this is reflected in their livelihoods. In addition, a brief presentation of their income is given. The second section presents how the indigenous peoples of the study areas directly contribute to deforestation and degradation and also their knowledge with regards to environmental impacts of deforestation. The third section presents findings related to the indigenous peoples opinions towards nongovernmental organizations (NGOs). Findings with regards to the central issue of trust are presented in section four with a focus on governmental involvement at the community level and with regards to deforestation and degradation. Opinions with regards to corruption within the respective research areas are also presented to elaborate on the issue of the social trap. Finally, the fifth section of this chapter highlights findings related to local opinions of participation in future REDD initiatives. Data collected from the Ministry of Forestry and other institutions with regards to future REDD initiatives are also included in this section.

VI.I Survival on a Common

Forest-dependency & Livelihoods

Forest dependent people are 'people directly dependent on forest resources for livelihood: this category refers to people partially or wholly dependent on forests for subsistence or cash income' (Ma 1999:1).

Extremely dependent on the rainforest, the Hatam-Moulei relies on the forest for their survival. The forest is used for farming, hunting, obtaining food, and obtaining timber for domestic purposes. As shown in Figure XII, the majority of respondents are farmers and eleven percent of those interviewed engage in only hunting. In addition to being a forest-dependent community, the Hatam-Moulei of Mokwam is also thus a farming community. Farming is an essential part of the community´s survival as vegetables grown in the farms are used for both private consumption and as a source of income, when sold in the town of Manokwari. In addition to farming, some of the respondents choose to combine farming with hunting.

Figure XII displays the Hatam-Moulei´s sole dependence on the rainforest for their daily existence. There are no other forms of non-forest-dependent livelihoods that generate income for the community.
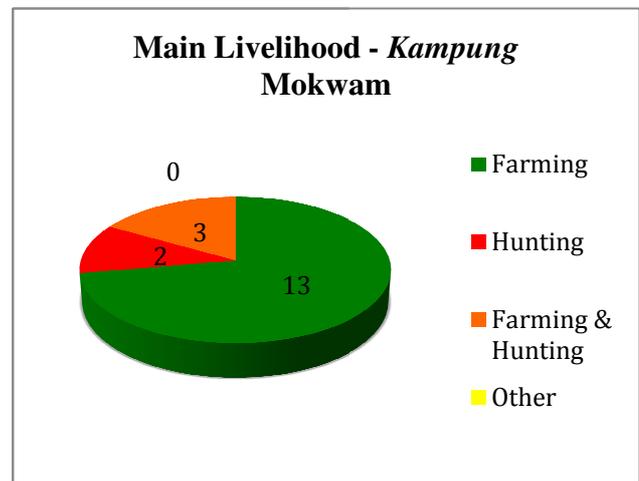
FIGURE XII

The main reason for this, according to the people, is the bad quality of the road to Manokwari town, making a distance of twenty-five kilometers painstaking and extremely costly.
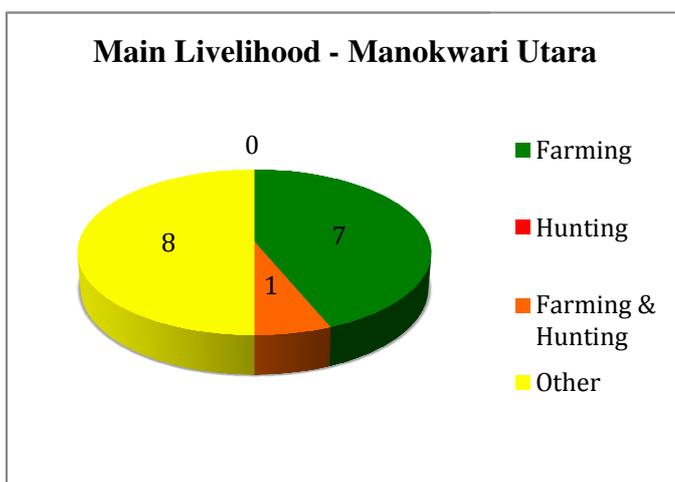
FIGURE XIII

In contrast to the Hatam-Moulei of *Kampung* Mokwam, the communities of Manokwari *Utara* are as dependent on farming as they are on non-forest-dependent livelihoods, thus not fully dependent on the rainforest. Situated along the northern coast of Manokwari District, the communities of Manokwari *Utara* have numerous opportunities of engagement within alternative livelihoods. Although farming is the main livelihood of the majority of people in the area, livelihoods of respondents with non-forest-dependent occupations consist of studying, working as civil servants, engaging in business, and

fishing, as access to Manokwari town is more convenient for the peoples of Manokwai *Utara* as opposed to those of Mokwam. Thus, the Arfak indigenous peoples of Manokwari *Utara* do have significant alternative livelihoods that are not directly related to the rainforest. According to the respondent in Pami, all the local Papua Barats of the area, for example, live in the university area of Amban in Manokwari town and only come to work in their farms during the weekend. This is due to the fact that all of the farmers of Pami have other primary livelihoods and farming has eventually become a secondary livelihood, thus reducing the forest dependency of the indigenous peoples of Pami.

In addition, not only do fifty percent of those involved with non-forest-dependent livelihoods have secondary or tertiary livelihoods; farmers of Manowkari *Utara* sub-district too have secondary or tertiary livelihoods.

In *kampung* Mokwam, the opinions with regards to choice of livelihood vary. Although the majority of respondents are farmers, there are those that do not involve themselves in farming activities that involve a larger scale, as their concern for the environment overrules the need to farm. The eleven percent of the respondents that are hunters stated that they only hunt because they strongly oppose deforestation:

> *"I have a forest, but I do not like people coming to my forest, because they take wood. I report these incidents to the police. I do not like deforestation and clearing of the land. That is why I try to plant my vegetables and do my gardening around my house."*
> – Hunter Mokwam

According to another respondent:

> *"Only the land required for gardening is cleared for farming; the rest is left as forest. We do talk about cutting trees in our village meetings and try to stop people from making more gardens"*. – Farmer Mokwam

Income Generation

In collecting data with regards to the income of the inhabitants of the research areas, none of the respondents in Mokwam could state an approximate figure for a monthly income. Reasons for this is that monthly incomes fluctuate according to the levels of produce from farming and the amount of money available to each household for transporting the produce into Manokwari town for further income generation.

Some respondents did mention that they receive small sums of money from the government through the Special Autonomy Fund. However, this money was mainly used on construction materials such as cement and metal sheets (bought in Manokwari town), for housing purposes.

No income is generated from the wood that is obtained from forest degradation in Mokwam. All respondents confirmed that they did not sell their wood. The wood was rather used for personal uses such as building of homes, firewood, and making of cooking utensils and kitchenware.

In Manokwari *Utara* sub-district, the respondent in Pami states that farming, as a primary livelihood, does not generate enough income anymore because it is expensive to live on the outskirt areas of Manokwari, such as Pami. The respondent mentions that although there are no illegal logging activities in Pami, the local Papua Barats who own the land in Pami do allow chainsaw operators to chop trees for a price:

> *"In Pami, there is no illegal logging, but we (orang Arfak – the Arfak people) allow people to cut trees, which the government considers illegal logging; but is considered legal according to our local laws."* – Civil servant and farmer, Pami

Thus, income is generated also from forest degradation in the village of Pami. However, the respondent did confirm that he himself did not allow this, because besides being a civil servant, he had bought land where he was going to build a home and let the rooms to students in the university area of Amban. Although the respondent claims to cut approximately twenty to thirty trees every year, he does not sell the wood:

> *"I do not sell the wood after clearing forest for farming. I leave the wood to rot so it becomes humus."* – Civil servant and farmer, Pami

The respondents of *Kampung* Nuni confirmed that each and every family in the village was a stakeholder in the village *kopermas* collective, even though their primary livelihood may be farming. Each family allows the workers in the collective to cut trees on their land. The trees are then brought back to the village where they are transformed into planks and other forms of wood. The collective then supplies this wood to small-scale companies and furniture shops in Manokwari town. The logging business is lucrative and run by the chief of the village. It is a secondary or tertiary livelihood for the village members; apart from those directly involved. The collective generates an additional income for the members of *Kampung* Nuni at the cost of forest degradation in the land owned by the villagers.

Manokwari *Utara* has been an area in which the Indonesian government had, in 1996, started a cocoa plantation project for the purpose of income generation:

"DINAS (the cocoa company) came here without giving us any information about anything. Until 2002 we had a good harvest, but then, the locusts came and infested the cocoa plantations in 2003. When this happened to our community, we went over to planting vegetables and selling them in Manokwari." – Respondent in Saobeba

According to the respondent, the cocoa plantation brought good levels of income to the community of Saobeba, while it lasted. DINAS would make the local people cut the trees and plant the cocoa. Since there was no road in the area at

61

the time, the wood that was cleared was left to rot in the rainforests.

The wood that is cut as per today, for building new farms, is used for making boats, fences, and housing in Saobeba. The homes in Saobeba are surrounded by wooden picket fences. The main livelihood in Saobeba is farming and generates an approximate monthly income of 300-500 thousand Indonesian Rupiahs (IDR) per household, according to the village chief.

In Mubrai there is also no income generation due to the wood that is available after the felling of trees for the purpose of farming. The village chief in Mubrai confirmed that the people only cut trees to establish farms. The wood was used for making homes and for other domestic purposes. Income earned in Mubrai was mainly from selling vegetables occasionally in Manokwari town, however an approximate figure could not be given. Transport costs were too high to travel each week and thus, an approximate monthly income figure could not be given.

VI.II Deforestation & Degradation

In being a forest dependent community, the Hatam-Moulei indigenous peoples of *Kampung* Mokwam are aware of their contributions to deforestation and degradation. However, despite this awareness, actions related to deforestation and degradation is a necessity for survival. For example, in order to farm in the rainforest, forest areas must be cleared. The results obtained show that fifteen of the eighteen respondents engage in active deforestation. As one respondent states:

> *"I will still continue to cut trees for expanding my garden. If I get a lot of money, maybe I can stop cutting trees".* – Farmer Mokwam

When asked about the community collective in Nuni and its effects on the forest, one respondent stated:

> *"I have heard of large logging companies, like in Bintuni. I have also seen it on TV. But the community logging company here in Nuni is ok, even if we cut the forests. This is a community business and we need the money from it. The advantages of having a small-scale logging company is that we earn money for housing and our children´s education. Even though deforestation is really bad for the environment, we still need the land for farming and cannot stop cutting trees. That´s just the way life is!"* – Business woman & Cocoa Farmer, Nuni

And today, although not all the village communities of Manokwari *Utara* have an income from forest degradation, the village members still play a significant role in the clearing of land:

> *"The Arfak people own all the land. But we keep moving our farms and need to chop trees to make new farmland. We leave the old farms to re-grow into forest. It takes approximately five years and the old farms are rainforest again. Papua Barat is very fertile."* – Key Respondent, Saobeba

> *"From 1998 to 2010, I think we have cut approximately 3500 trees in our Kampung. This includes the amount we had to clear for the cocoa plantation."* – Respondent, Saobeba

Knowledge of Environmental Impacts of Deforestation

Despite their dependency on the forests, twenty-eight percent of the Hatam-Moulei in Mokwam is well aware of the environmental impacts of deforestation. As Figure XIV shows, more than fifty percent of those interviewed were not aware of / unsure of the negative impacts caused by forest degradation. The number of respondents (five) that stated that they knew of definite environmental impacts caused by forest degradation was equal to those (five) that were definite that there were no environmental impacts caused by forest degradation.
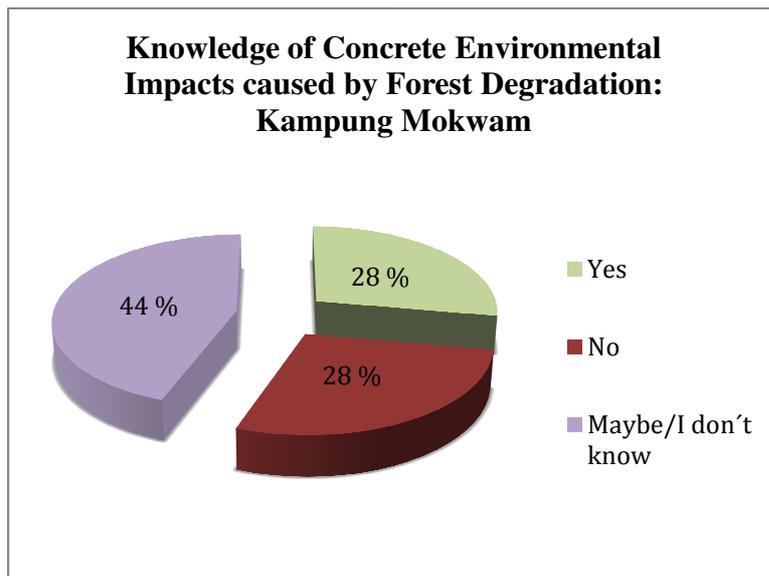
The others (eight) did not quite know of environmental impacts and some thought that impacts were a possibility, but were unsure. However, what possible impacts they thought of were not specified.

Knowledge of Concrete Environmental Impacts caused by Forest Degradation: Kampung Mokwam

■ Yes
■ No
■ Maybe/I don´t know

28 %
28 %
44 %

FIGURE XIV

Thus, the five respondents of the Hatam-Moulei who were definite of their knowledge of concrete environmental impacts caused by forest degradation make twenty-eight percent of the total interviewed. Although this may seem to be a small percentage of the total, it is vital to acknowledge that given the living standards and lack of education in the area, the community does have knowledge with regards to environmental impacts. It is important to mention that the respondents that were aware of such environmental impacts were key people in the village who were also willing to teach other village members of impacts. Some of the impacts mentioned are quoted below:

> *"Cutting trees will reduce the water available because trees and roots hold water. Land erosion is also an impact of deforestation. This affects our crops."* – Farmer, Mokwam

> *"I don´t think that deforestation is good because we depend on the forest for kus kus and birds. And if we cut the forest, these animals and birds will disappear. That is why we have to preserve the forest."* – Farmer and hunter, Mokwam

However, although some community members are aware of the environmental impacts of forest degradation, the Hatam-Moulei face a challenge where the opportunity cost of surviving is that of forest degradation:

"I will still cut down trees. I need my garden, I need to survive!" – Farmer, Mokwam

"Deforestation brings natural disasters, but I cannot help it when I do not have money." – Farmer, Mokwam

"No, I don´t think that deforestation is good. Big trees cannot be reproduced and medicine trees are also cut." – Farmer
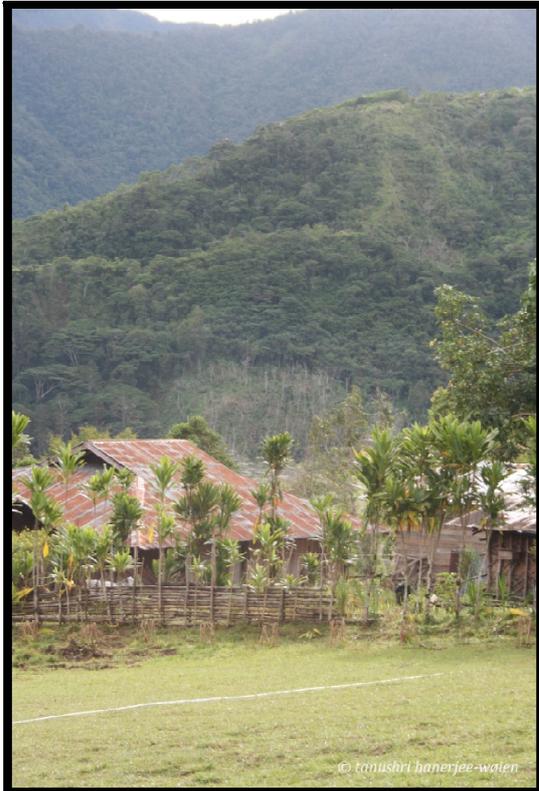
And whilst some realize the dilemma, there are others in Mokwam that do not understand the *problem* whatsoever:

" I do not see the problem! Primary forests are cut and secondary forests emerge. These secondary forests consist of banana and kasava." – Farmer

The Hatam-Moulei of Mokwam are clearly a hundred percent forest-dependent community, whether their livelihood be farming, hunting, or both; and do play a significant role with regards to small-scale forest degradation in the area. Forest degradation is a result of basic survival needs and very little income is generated from their current lifestyle. Unfortunately, the options of non-forest-dependent livelihoods are minimal and this lives them with no other option than to continue their life in the way that they do.

In contrast to *Kampung* Mokwam in Pegunungan Arfak, where only twenty-eight percent of the respondents were aware of environmental impacts caused by forest degradation; eighty-seven percent of the respondents in Manokwari Utara are aware of environmental impacts caused by deforestation.

Despite their involvement in forest degradation, the knowledge that is known throughout the interviewed communities with regards to environmental impacts caused by forest degradation is vast. The impacts

Knowledge of Envrionmental Impacts caused by Forest Degradation: Manokwari Utara

0 %   13 %

87 %

Yes

No

Maybe/Do Not Know
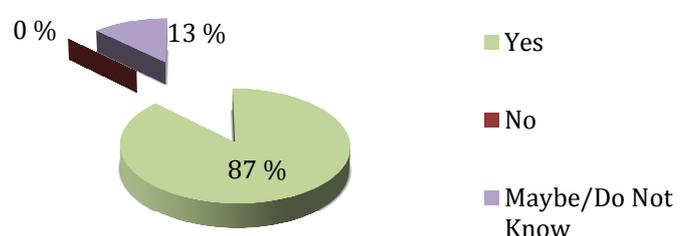
FIGURE XV

affect these communities directly and are source to active thinking and contemplation in Saobeba.

The following quotes from the focus group discussion carried out in Saobeba present the knowledge of the residents with regards to deforestation and degradation:

> *"The effects of deforestation are landslides and floods. Water sources will be affected."*

> *"Deforestation causes the river to become narrower and narrower. There is ecosystem damage and animals disappear. I know of global warming; it is not good."*

> *"Deforestation does something to the air and we here in Saobeba struggle with breathing problems."*

Despite the knowledge with regards to their own role when it comes to deforestation, the indigenous peoples of Manowkari *Utara* also do not fully realize the effects of their own activities, as in *Kampung* Mokwam:

> *"I do not contribute to global warming as much as the logging companies do!"* – Respondent, Nuni

As the above quote suggests, some of the respondents feel accused when asked about their role with regards to deforestation. In the case of both the research areas, the indigenous peoples do not openly admit that their contribution to forest degradation is also a part of a *larger global picture*. However, they are fully aware of the impacts that follow as a result of forest degradation but face a dilemma. This dilemma presents poverty and basic survival on the one hand and forest conservation on the other.

VI.III Opinions on Nongovernmental Organizations

Data collected with regards to nongovernmental organizations and their involvement in the respective research areas revealed that the presence of such organizations, their purpose, and their results are not always clear. A major issue with regards to nongovernmental organizations is the fact that they do not inform the community members of their work. As stated by one respondent in Mokwam:

> *"I do not believe in NGOs and the government anymore. I am still waiting for results from the local NGO"* – Respondent, *Kampung* Mokwam

> *"I do not know that the purpose of an NGO is to help the local people. We have been exploited and used by them. It is only after the failure of the WWF programme here that we know about international donors."* – Respondent, Mokwam

The dissatisfaction and basic distrust that the indigenous peoples of Mokwam and Manokwari *Utara* experience are present in their overall impression of NGOs and what these organizations represent:

> *"I have heard of NGOs, but there are not any here in Pami. I´ve heard something about the UNDP, but am still waiting to see the realization."* – Respondent, Manokwari *Utara*

> *"I would like to join with an NGO, but there is no opportunity for local participation. Before the current NGO was set up, the locals had a meeting with the NGO and suggested that local people ought to receive jobs in the organization. But the answer was that the locals were not educated enough to have jobs in the NGO and that they required graduates from the forestry department at university level. This angers me and I do not like the concept of NGOs here. It was the same with the other NGO (butterfly farming) that was here before. There was no local participation."* – Respondent, Mokwam

Other respondents in Mokwam are confident in their ability to be involved in the programs of nongovernmental organizations, but are waiting to be informed of what the programs of the current organization in the area consist of:

> *"Yes, I would like to join with a local NGO to know about the programs. If given the opportunity, I would like to run one of the programs. But the current NGO doesn´t have a program. They have been here for two years now without any action. We want a meeting this month to know of their programs."* – Respondent, Mokwam

> *"I would be willing to collaborate with an NGO because I would like to work with them, but then I have to clearly know the plans and intentions of the NGO beforehand".* –Respondent, Mokwam

> *"We refuse to work with an Indonesian NGO – only do we want to work with a foreign NGO. Foreigners are honest people, Indonesians are not!"* – Respondent, Manokwari *Utara*

VII.IV Trust & Governance

This section of the chapter presents the findings that relate to the issue of trust and governance in the study area. The respondents were asked questions with regards to how they felt about the Indonesian government and its performance from the national to the local level.

> *"The Ministry of Forestry came here and 'made' a team for monitoring the forest; I am a member of the team. However, nothing else has been implemented and as usual, I am waiting. We have been told by the Ministry of Forestry that we will get money if we protect the forest, but we have not received anything yet."* - Respondent, Mokwam

Findings show that the general impression of the Indonesian government in both Mokwam and Manokwari *Utara* is negative. Indigenous peoples find that the government does not prioritize assisting them and that there is no realization with regards to promises made to the communities:

"I have made numerous proposals for the government, but I do not even get an answer. They do not care unless we make a demonstration." – Respondent, Nuni

The indigenous peoples of Mokwam, although quite isolated from the town of Manokwari, are well aware of governmental plans around the coastal areas of Manokwari. The different indigenous tribes exchange information when they meet at the markets of Manokwari to sell their vegetables. This portrays how the indigenous Papua Barats feel somewhat 'united' due to the common feelings of injustice that they experience from the government. The lack of trust towards the government is clear in both research areas:

"There is a lack of connection between locals and the government. For example, the cocoa plantation concession in Manokwari. The locals did not allow the government to have a cocoa plantation. But the government wants it and goes ahead with the plan. The locals get angry at the govt. and thus do not want to co-operate and/or comply with government plans and programmes (including NGO programmes). No violence, but resistance!" – Respondent, *Kampung* Mokwam

"The government will only help the helpless people. When they see that 'people are somewhat standing on their feet', they stop helping!" – Respondent, Saobeba

And although quite a few of the overall respondents in the two study areas are disappointed with the government, there are a few that seem to be happy with the government:

"I write a proposal to the desa and this is sent to the kabupaten and then I get granted money for construction material. My proposal goes through. I am happy with the government." – Respondent, Nuni

"I think that the local government is quite good. Yes, the Kampung helps me to complete building materials. The government gives me money to complete the house through the Special Autonomy Fund." – Respondent, Mokwam

Whereby some are happy with the way the government disposes of the Special Autonomy Fund, there are those that disagree:

"I think that the local government is quite good, but I want to complain about the Special Autonomy Fund because we only get a small amount of the money. I don't get enough money for all of my expenditures." – Respondent, Mokwam

The complex web within the social trap is woven further due to the factor of corruption within governmental institutions. The lack of trust of the indigenous Papua Barats towards the government casts light on their wish for foreign involvement in the development of their respective areas.

"I like better to work with foreign people, because Indonesians and local NGOs want to control everything and work with the military. Foreigners came and suggested the idea of butterfly farming, but when the Indonesians took over, they wanted control over everything. The aim of the program was to "convert" the livelihood from deforestation to butterfly farming, but the Indonesian govt. wants to control everything that happens here. I prefer to work with foreign NGOs and it makes me happy. But

foreigners leave Papua Barat because of the bad laws of Indonesia that make it difficult for foreigner to work here". – Respondent, Mokwam

"The head of the kampung is corrupt because he has complete facilities like rice, oil, etc. But no money is used for equipment for the village." - Respondent, Mokwam

"Corruption is a very bad thing and it affects the local people because it will slow down the development projects here in Mubrai-Diba. Often the budget for this kampung is cut and this affects the progress of our development projects and we thus live under the poverty line." – Respondent, Mubrai-Diba.

The frustrations caused by the social trap in Manokwari, have unfortunate consequences:

"I have never engaged in violence myself, but give ideas and motivation to the community to pursue violence. Violence is better than talking to the government or NGOs. Once, we were not happy with the government when one of the tribe members passed the exam for civil servant and didn´t get appointed; we made violence in Manokwari. Here, in Mokwam, we broke the windows of the NGO house because they expect services from us and don´t pay us!" – Respondent, Mokwam

"The butterfly farming project started by the WWF[2] was not good. YBLBC[3], the NGO that collaborated with WWF, only gave us a measly sum of Rupees for each butterfly. The only reason we found this out was because one of the villagers got information in the market in Manokwari with regards to how much YBLBC sold the butterflies for internationally. When we compared this to how much we received per butterfly, we were furious. I was a part of the group that went to the NGO house here in the village and broke all the windows. We were angry because of the injustice". – Respondent, Mokwam

VII.V REDD in Papua Barat: The Need for Participation

According to the three government officials who were interviewed at the Ministry of Forestry, REDD in Papua Barat is a very new concept. The government officials stated that the keyword for successful forest conservation programmes is collaboration – collaboration between the government, nongovernmental organizations and indigenous communities. The government officials precisely stated that the local communities are the key persons with regards to forest conservation.

The Ministry of Forestry has a programme, *Program Perencanaan Potensi Kehutanan (PPPK)*, which is a program of the planning of the potential of forests. Through this program, surveys of the forests´ potential are made. These surveys are conducted with regards to aspects, namely wood and ecosystem. Other projects include *Hutan Produksi Konversi* (HPK) and *Hutan Produksi Lain* (HPL). When asked whether PPPK and its under projects in addition to other forestry related projects could be incorporated into future REDD initiatives one of the officials stated:

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[2] WWF – World Wildlife Fund

[3] YBLBC – *Yayasan Bina Lestari Bumi Cendrawasih* – Local NGO in *Pegunungan* Arfak

"Yes, perhaps we can intertwine our programs with REDD, but we are still waiting. We have heard of REDD in Kalimantan and Sumatra. We want actions and not words. If REDD can work in Kalimantan and Sumatra, why not in Papua Barat?"

The officials of the Ministry of Forestry stated that if the planning with regards to REDD in Papua Barat is good, then the results will be good. REDD activities that have occurred in Papua Barat until now are that the Australian government had an awareness program and seminar on REDD in Papua Barat. There have also been some other seminars with regards to REDD:

"Everything is so new. Although they had a seminar here, we still have no idea as to how we will monitor carbon emissions. It will be better if there is a REDD NGO supervisor of some sort who can help us set this up and that we are not left to do this alone".

The government officials mentioned that a prerequisite for successful REDD implementation in Papua Barat would be to train the students at the Faculty of Forestry of *Universitas Negeri Papua Barat* (UNIPA) with regards to REDD. The need for supervision with regards to REDD was also mentioned by a key informant at the Faculty of Forestry at *Universitas Negeri Papua Barat* (UNIPA). According to this informant:

"Supervison is necessary in order for the REDD programme to be successful…supervision, not for a short time, but over a long period."

This view is not only one that shared by government officials and educated respondents at the administrative level, but also by the indigenous peoples of Mokwam and Manokwari *Utara*. The following quote is from a respondent in Mokwam:

"In the future, I hope that foreigners will come here and know of the situation here and help us with our village. I hope that foreigners can come and guide us and empower us to take care of and run our own village. We need guidance from foreigners and not Indonesians, because Indonesians are corrupt! Grants for my village should not go through Jakarta and the other governmental agencies; they should come directly to us. Because from Jakarta all the way to the local government in Mokwam are corrupt!" – Respondent, Mokwam

It was mentioned by respondents at the Ministry of Forstry that poverty is a major reason for deforestation in Papua Barat and that less poverty would mean less deforestation. When asked if The Ministry of Forestry worked together with the United Nations Development Programme (UNDP), the answer given was that the UNDP were only interested in their Millennium Development Goals (MDGs) and that there was a general lack of coordination and collaboration between nongovernmental organizations and the government in Papua Barat.

In interviewing a key informant at the Faculty of Forestry at UNIPA, it was also revealed that the general problem with regards to Papua Barat was that of poverty. According to the respondent, the entire population of Papua Barat is equal to perhaps one district on the administrative island of Java, but poverty levels are higher in Papua Barat at the provincial level when compared to the district levels of Java.

The respondent went further and stated that development in Papua Barat was a problem due to the lack of realization of programmes presented by both governmental and nongovernmental organizations. In his opinion, the impatience of government officials with regards to REDD is not going to bring effective REDD initiatives to Papua Barat:

"*The challenge is how to make REDD attractive for Papua Barat*". – Key Informant, UNIPA

Another aspect of developmental challenges in Papua Barat according to the respondent from UNIPA is that there is a complete lack of collaboration at all institutional and organizational levels. By this, he referred to how there was no collaboration between:
1. Governmental institution – governmental institutions,
2. UNIPA – governmental institutions, and finally
3. Nongovernmental organizations – governmental institutions.

The reason for this lack of collaboration, according to this key informant, is that none of the parts want to lose or use their money to or for another part. All of these actors are trying to accomplish the same activities, but without wanting to collaborate with one another. In addition, the respondent mentioned the lack of transparency with regards to these institutions does not aid in any way. According to the respondent, most of the institutions and organizations make the programme being suggested, implement it, and evaluate it.

According to the respondent at UNIPA, situations and working conditions cannot be changed drastically in Papua Barat; new concepts have to be introduced with a *step by step* attitude. The reason for this is the difference in culture of Papua Barats when compared to other Indonesians:

"*Papua Barats are called lazy, but they are not. They feel that they are lucky to have their natural resources and in Papua Barat, the modern life is not so attractive. People wake up when they want and take things as they come - it will take generations to change the Papua Barat way of thinking*". – Respondent, UNIPA

When asked what the prerequisites of implementing successful REDD initiatives in Papua Barat were, the respondent at UNIPA stated that it was important to be optimistic with regards to REDD in Papua Barat and the following preconditions were necessary:

1. A step-by-step implementation process that is done over time,
2. The involvement of local governments,
3. The representation of the central government, and
4. An honest explanation of REDD and its advantages and disadvantages to the indigenous peoples and the local government. This explanation ought to come from the central government in Jakarta, thus highlighting the strengths and weaknesses of REDD.

The respondent went further in stating that nongovernmental organizations in Papua Barat should be integrated with the local government in order to ensure collaboration:

"*This should be done, otherwise we are just wasting everybody´s time and eventually everybody´s money! It is appalling that nongovernmental organizations who claim to work with forest conservation cannot work together with the Ministry of Forestry*

and/or other organizations that are involved with the same type of work!" – Respondent, UNIPA

Focus group discussions with regards to forest conservation carried out with the indigenous peoples groups in Mokwam and Saobeba revealed that the inhabitants of *Kampung* Mokwam were very confident of their abilities to conserve and preserve the rainforest. The indigenous peoples of Mokwam rather disliked that the government came to Mokwam, asked them to put together a forest conservation team, and at the same time wanted to command the group as to how the forest was to be conserved. Despite this, the indigenous peoples of Mokwam had no hesitations in presenting names of villagers that were willing to be involved in and run their own forest conservation team. However, inhabitants in the sub-district of Manokwari *Utara* were not as confident of their abilities to preserve and conserve the forest. They voiced that they needed guidance with regards to forest conservation as they did not know much about it, but were willing to learn.

Based on the findings presented in this chapter and the theoretical background presented in chapter IV, the following chapter aims to bridge the empirical findings to the research questions of this thesis.

CHAPTER VII

Results and Discussion

The purpose of this chapter is to discuss the research questions of the thesis with regards to the presented theories, theoretical framework, and empirical findings. The chapter is presented in five sections, each dedicated to its respective research question. The main objective of the thesis is to discuss trust as a precondition for the empowerment of indigenous peoples in Papua Barat to actively participate in REDD initiatives through the build-up of social capital. Section one begins by addressing the dependency of the indigenous peoples to the rainforest and how their forest dependency affects their livelihood. Section two further analyzes the use of the rainforest by the indigenous peoples by discussing their role within deforestation and degradation and if they are aware of the impacts of their actions. The third section presents the topic of development within the given research areas and how nongovernmental organizations are perceived by the indigenous peoples. Section four addresses the issues of distrust present between indigenous peoples, government institutions, and nongovernmental actors in the Papua Barat setting. Finally, section five discusses how social capital can be built by the empowerment of indigenous peoples in Papua Barat in order to ensure successful administration of future REDD initiatives in the region. Table V in this section elaborates on common-pool resource design institutions within the Papua Barat setting. This introductory section rounds off with a presentation of a model showing the integration of the context of the thesis, the theories presented in chapter IV, and finally, the theoretical framework (also presented in chapter IV). The model in Figure XVI illustrates how the different theories presented are relevant at the different stages of the theoretical framework and the context of the thesis. The trust aspect of Figure XVI is further elaborated on in section five of the chapter, where REDD concepts and other respective theories place the emphasis on trust as a precondition for successful implementation of REDD intiatives in Papua Barat.

LEGEND
* Theoretical framework
* Theory incorporation
* Contextual background + analysis
* Examples

INDIGENOUS COMMUNITIES
Determined to preserve, develop, and transmit to future generations:
- Ancestral territories
- Legal patterns
- Cultural Patterns
- Social institutions
- Ethnic identity

CONNECTED TO LIVELIHOODS

LEGAL PROPERTY RIGHTS

CIVIL SOCIETY (NGO's, UNIPA) INVOLVMENT TO BUILD SOCIAL CAPITAL

- LAW No. 21/2001 SPECIAL AUTONOMY (PAPUA)
- COMMONS: A JOINTLY OWNED SET OF RIGHTS Example Nepal

(COBO 1986 AS CITED IN REINFJORD 2009)

PRESERVING RIGHTS OF INDIGENOUS PEOPLES (UN 2007)

(KRISTIANSEN 2004): SUBCULTURAL CHARACTERISTICS, ETHNIC RESOURCES KNOWLEDGE BEHAVIOR: SOCIAL CAPITAL

REDDI – Readiness Phase I

HISTORICAL EVENTS CAUSING SOCIAL TRAP (ROTHSTEIN 2005)
- Threatening ancestral territory
- Threat to ethnicity and culture (loss of distinctive identity)
(REINFJORD 2009)

LIVELIHOODS
Livelihoods connected to forest use / degradation
- Use of ancestral lands and territory
- Livelihoods based on ethnic and ancestral survival
(HARDIN 1968) TRAGEDY OF THE COMMONS

TRUST: PERSPECTIVE 1 (WORCHEL 1979)

POLITICAL GOVERNANCE THROUGH LEGAL FRAMEWORKS
NATIONAL REDD APPROACH
TRUST: PERSPECTIVE 2 (WORCHEL 1979)

SOCIAL CAPITAL BUILD-UP
(COLEMAN 1988)
(Ref. Figure IX)
PHYSICAL CAPITAL FORMATION
(COLEMAN 1988)
Improvement of local infrastructure: roads, schools health, education, housing (POLICIES)
- Enhances trust build-up
- Vital for social network formation through NGO involvement

ALTERNATIVE LIVELIHOODS
Not requiring forest degradation
– Choice and willingness to adopt REDD related livelihoods due to increase in knowledge through social networks, better information and NGO involvement.
(KRISTIANSEN 2004): STRENGTHENING OF ATTITUDES THROUGH VALUES & MOTIVATION (UN 2007 ARTICLES 2&3)

TRUST
Between:
IP's ⇔ NGO
IP's ⇔ Govt.
Govt. ⇔ NGO
Reducing SOCIAL TRAP
(ROTHSTEIN 2005)

International support   International support

TRUST: PERSPECTIVE 3 (WORCHEL 1979)
MORE KNOWLEDGE ON IMPACTS OF DEFORESTATION

COLLECTIVE ACTION: WILLINGNESS OF ALL PARTS TO ACT COLLECTIVELY BECAUSE TRUST IS PRESENT

GOOD GOVERNANCE

HUMAN CAPITAL FORMATION
(COLEMAN 1988)
Improvement of networks (KRISTIANSEN 2004)
Through NGO programmes, better knowledge, more participation & involvement
Example Mali

(KRSTIANSEN 2004): SOCIAL NETWORKS CREATE SOCIAL CAPITAL
(ROTHSTEIN 2005): 'Capital': Quantitative
SUBNATIONAL REDD APPROACHES (Angelsen et al. 2008)

HIGHER LEVELS OF LOCAL EMPOWERMENT
Indigenous peoples have the choice of participation in CPR Management
(KRISTIANSEN 2004): PICKING OPPORTUNITIES THROUGH IDEAS, CAPITAL, INFORMATION & MARKETS
SUBNATIONAL REDD APPROACHES (Angelsen et al. 2008)

CPR MANAGEMENT THROUGH GOOD GOVERNANCE (OSTROM 1990)
Collaboration between:
- IP's
- Governments
- NGO
- International Institutions
Example Nepal
COLLECTIVE ACTION (OLSON 1965)

SOCIAL CAPITAL FORMATION
(COLEMAN 1988):
Higher levels of local empowerment & continuation of knowledge growth

Alternative livelihoods through REDD PES.
- Improvement of social capital
- PES (Angelsen & Wertz-Kanounnikoff 2008)
- Not monetary but payments through social build-up
- Self governance Example JI, India
- May be perceived as business / entrepreneurial opportunities
(KRISTIANSEN 2004)

Example JI, India
Example Kopermas, Papua

SUSTAINABLE IMPLEMENTATION OF REDD INITIATIVES
- Sustainability through strong social bonds and norms (PRETTY & WARD 2004) by reducing social dilemmas
- (FUKUYAMA 1995)

Increase in social capital through increase in knowledge of forest conservation: MRV, active participation, PES, knowledge on REDD Payments and income generation through REDD & empowerment
(KRISTIANSEN 2004, COLEMAN 1988)

(ROTHSTEIN 2005): 'Social': Qualitative

Model Showing Integration of Context, Theories, and Theoretical Framework
FIGURE XVI

VII.I Forest Dependency & the Importance of Social Capital

Hardin (1968) discusses *The Common´s Dilemma* by stating that personal self-interests of individuals leads to the overuse of common-pool resources, and in turn affects the common long-term interests of society as a whole. However, 'pure environmental concerns are difficult to accommodate in a situation in which people lack the basic necessities of life' (Resosudarmo & Jotzo 2009:17). Lack of infrastructure in terms of health, education, and facilities required to survive the conditions of living in rural Papua Barat are reflected in the research areas of *Kampung* Mokwam and Manokwari *Utara*. The lack of basic necessities in addition to difficulties related to access to goods and services leads to a dependency on common-pool resources. Although Hardin (1968) argues that man´s selfish interests will lead to the inevitable destruction of all, it must be counter-argued that the indigenous peoples of Papua Barat must survive in their respective conditions where a lack of infrastructure, thus a lack of social capital prevails. In surviving the harsh conditions of rural Papua Barat, each indigenous individual has to maximize individual gains in order to ensure survival. Although Ostrom *et al.* (1994) state that individuals may as a collective act in ways that would not benefit the aggregate in the long run, they do not support Hardin´s theory due to the unique feature of every common within its given setting. This unique feature also applies to Papua Barat.

The natural rainforest resources are not used by the indigenous peoples of Papua Barat only as a resort to survive their living conditions as per today, but have been an ancestral way of living for centuries. The Hatam-Moulei of Mokwam has been a farming tribe for centuries, as was stated by a respondent of the village. Cobo (1986) as cited in Reinfjord (2009) correctly reminds one of the strong ties that indigenous peoples have to their land and territories. Thus, the indigenous peoples are the main focus of this study and are rightfully placed on the top of the model in Figure XVI, as it is their involvement in REDD that is the backbone of this research. The cultural patterns, social institutions, and ethnic identities of the indigenous peoples that are connected to the respective livelihoods are subcultural characteristics necessary for the build-up of social capital as Kristiansen (2004) points out. The ethnic resources, knowledge, and behaviors ought to be used for the build-up of social capital, thus, rightfully preserving the rights of indigenous peoples as mentioned in the UN Declaration on the rights of Indigenous Peoples (UN 2007).

The determination to preserve, develop, and transmit to future generations was also evident in Manokwari *Utara*, as the respondents from the different villages mentioned how farming, fishing, and trade activities have been dominant livelihoods since the times of their ancestors and also activities that would be carried through into the fuure. Within this research area, access to the coastline has brought about the livelihood of fishing and trading has also been easier by sea before the road was built in 2005. However, perhaps the use of common-pool resources is higher today due to high prices of goods and services obtained in Manokwari town. Although the indigenous peoples of Mokwam do not sell their timber, they do fell more trees to produce vegetables that they can sell in Manokwari town. In Manokwari *Utara*, village *kopermas* collectives, as in Nuni, make use of common-pool resources to obtain better incomes for the inhabitants of the village. As shown in the *kopermas* example in chapter IV, such village collectives enhance collective action and build social networks, thus building social capital. Thus, it is clearly visible that the use of common-pool resources is not only for

basic survival needs as was in ancestral times, but also aids in building social capital in the research areas, through attempts of increasing income.

In the general setting of the respective research areas, evident lack of infrastructure leads to an absence of social networks. Indigenous peoples tend to relate to individuals that belong to the same ethnic group in daily situations, but do also relate to other indigenous groups, as presented in the findings. Networking with one another takes place in the town of Manokwari where information is exchanged. However, the frequency with which these meetings occur depends greatly on money available for travel to the town. Thus, the communities within the research areas lack social networks that could assist them in being less dependent on the forest and have the opportunity of alternative livelihoods. The lack of infrastructure and networks presents a situation whereby social capital lacks in these areas. As Kristiansen (2004) distinguishes, social networks have the ability to raise individual social capital, thus building human capital, thus directly linking social capital to livelihoods. A lack of physical capital (Coleman 1998) leads to livelihoods where individuals may resort to the overuse of common-pool resources, thus increasing forest dependency. In looking at figure XVI, it is clearly visible that through the build-up of physical and human capital, indigenous peoples will be empowered to actively choose alternative livelihoods that need not be extremely dependent on the rainforest.

It is important to note that the higher the levels of forest clearance for farming purposes, the higher the availability of farming land and thus, an increase in the amount of produce available for personal use or sale at Manokwari town. In the event of higher amounts of produce available, prices for the vegetables will decrease, thus making it less feasible for farmers selling at Manokwari to produce more vegetables. Thus, it is more economically feasible for indigenous peoples with farming livelihoods to produce less, as the lesser the produce available, the higher the prices, thus an increasing income for the farmer. The farmer respondent in *Kampung* Mokwam who mentioned this dilemma stated that farmers needed to evaluate the market before felling more trees to create more gardens, as excessive felling and farming would only decrease the price of the vegetables. This illustrates the knowledge already available to indigenous peoples as a result of life experiences and minimal social networks.

The theoretical framework in chapter IV illustrates how social networks and infrastructure are important in the build-up of social capital, which in turn, is important in bringing about collective action through trust. The model in Chapter IV based on Coleman´s (1998) work on social capital suggests how social capital build-up is directly involved with physical capital and human capital. In not being able to access goods and services present in the towns of Papua Barat, the rural inhabitants depend on natural resources for their personal and collective livelihoods, i.e. to build their physical capital. The Hatam-Moulei of Mokwam is more dependent on the rainforests than are the indigenous peoples of Manokwari *Utara*. This is clearly visible in that the Hatam-Moulei is a hundred percent dependent on the rainforests of *Pegunungan* Arfak, with farming and/or hunting as the main livelihoods of the respondents interviewed. However, the indigenous peoples of Manokwari *Utara* have other livelihood choices since they have access to both rainforest and the northern coast of the district of Manokwari. Livelihoods such as fishing and businesses give the residents of Manokwari *Utara* other options thus making them not as forest dependent as the residents of Mokwam.

Lack of infrastructure and lack of social networks nonetheless are living conditions that bring about a situation where combating poverty is among the factors that instigate deforestation

and degradation of the forests of Papua Barat. This is also confirmed by the comments made by the respondents at the Ministry of Forestry who mention that less poverty in Papua Barat would mean less deforestation.

VII.II Deforestation & Degradation – A need for Common-Pool Resource Management

The immediate cause of deforestation in the research areas is mainly, in addition to poverty, due to land use in the form of shifting, permanent agriculture, and non-agricultural uses. Non-agricultural uses of the land, for example, the village *kopermas* collective in Nuni, Manokwari *Utara* and the fact that indigenous peoples of Pami, Manokwari *Utara*, allow actors to fell trees, are carried out in order to gain income. Although at the expense of the environment, the very concept of the *kopermas* illustrates how social networks and self-empowerment can contribute to collective action through trustworthy partnerships for the benefit of the aggregate individual. Farming and felling of trees for obtaining wood for personal and commercial use is not only carried out by indigenous peoples of Papua Barat and it would be incorrect to conclude that small-scale clearing of the forests by these groups is the only cause of deforestation and degradation. However, in addition to the village *kopermas* collective in Nuni, indigenous peoples of Pami (although not residing in their village anymore) do allow small-scale logging companies and individuals to fell trees on their land for a sum of money. These small-scale concessions given by the indigenous landowners are considered illegal logging by the Indonesian government, but not by the landowner. It is also important to acknowledge that private entrepreneurs are given concessions by the national and provincial governments in order to clear rainforest for income generation at the national and subnational level. The example of the government´s concession of the cocoa plantation in Manokwari *Utara* is an example of such schemes for income generation causing deforestation. However, failure of the cocoa plantation stopped production and thus also income, at the expense of the rainforest.

The dilemma with regards to land ownership rights is one of the challenges acquired by the Indonesian government when acquiring the province of Papua Barat in 1969. That said, it is important to point out that the indigenous peoples of the research areas (and other areas of Papua Barat) believe that they are the rightful owners of their ancestral lands (which also happen to be common-pool resources in the case of Papua Barat), thus disposing of the land as they wish. On the other hand, the Indonesian government, in their need to combat deforestation due to global pressures, deems necessary to have control over the rainforests of the nation.

Figure XVI illustrates how indigenous determination of preserving ancestral territories and legal patterns with regards to land use are a vital aspect of indigenous identity, linking this section to the previous one. Legal property rights need to address indigenous identities through Law No. 21/2001 on Special Autonomy in Papua Barat. The figure also shows how political governance through legal frameworks builds trust between indigenous peoples and governmental institutions, thus enhancing social capital and encouraging alternative livelihoods within common-pool resource management.

Ostrom (1998:1) states that 'destruction or degradation of forest resources are most likely to occur in open access forests where those involved and/or external authorities have not

established an effective governance regime to regulate' certain factors. These factors include defining which actors are allowed to appropriate forest products (such as timber and wildlife). In addition, it is important to define when the designated actors can be appropriated, in what quantity, at which location and by what means. Other important factors that ought to be in place before appropriation rights should be granted are that of 'how appropriation and obligation activities are to be monitored and enforced' (Ostrom 1998:19). Conflicts over appropriation and obligation activities ought also to be resolved. Finally, rules that will affect the factors mentioned above must be changed over time as changes in the extent and composition of the forest and strategies of participants evolve with time (Ostrom 1998). 'Excluding or limiting potential beneficiaries from using a CPR is a nontrivial problem due to many causes. In some cases, it is the sheer size or, more generally, the physical attributes of the CPR' (Ostrom *et al* 1994:7). However, exclusion is necessary to reduce and control subtraction of natural resources in the rainforests of Papua Barat. And it is this control of subtraction of natural resources that the REDD concept aims to address.

A majority of the indigenous peoples interviewed are fully aware of the local effects of deforestation and forest degradation on their land and on their lives. This awareness is clearly visible as the respondents in both research areas mention how deforestation affects their soil, crop, and livelihoods and the awareness is a form of social capital through knowledge. Although the majority of the interviewed indigenous peoples do not have an understanding as to how deforestation affects carbon emissions and affects people and ecosystems at a global scale, their knowledge of how they themselves experience negative impacts of deforestation is knowledge that can be expanded. Local knowledge can be expanded to knowledge of impacts at a global level only if indigenous peoples are given the freedom and opportunities to empower themselves to effectively participate in REDD initiatives. It is important to acknowledge that the fact that the indigenous peoples are aware of the environmental degradation caused by deforestation activities also suggests that they are aware of the negative component of their activities, as mentioned in Hardin´s theory. Thus, in indigenous peoples being aware of the negative component of deforestation, ruin due to the 'cloud of ignorance' as stated by Hardin in 1978, is not inevitable. Rather, it can be argued that through the research conducted, and knowledge of the negative component of deforestation in both research areas shows that ruin is not inevitable in the areas where research was conducted for the purpose of this thesis. Bollier (2007) confirms that a socially managed common can be sustainable with proper institutional designs and social norms.

In linking deforestation and degradation to the previous section that dealt with livelihoods of the indigenous peoples there seems to be a negative correlation between the options of non-forest-dependent livelihoods and the knowledge of indigenous methods of forest conservation. In Mokwam, the members of the village have no option of non-forest-dependent livelihoods and thus spend their entire lives being forest dependent. Their knowledge of the forest, its conservation and monitoring are higher than that of the respondents in Manokwari *Utara* who have better options of non-forest-dependent livelihoods and where most of the respondents have secondary and tertiary livelihoods. However, despite these options of secondary and tertiary livelihoods in Manokwari *Utara*, infrastructure and physical capital lack in both research areas and civil societies such as nongovernmental organizations may be the link between indigenous peoples and REDD.

VII.III Nongovernmental Organizations: Linking Indigenous Peoples to REDD

Effective participation of indigenous peoples within REDD requires effective civil society organization involvement such as those of nongovernmental organizations. Not only can NGOs provide a link between indigenous peoples and the government, they provide a channel through which these communities can extend their social networks, thus increasing their social capital (Kristiansen 2004). However, as the findings in this research present, the opinions that the interviewed indigenous communities have of NGOs are negative due to lack of information of the purpose of NGOs, the lack of involvement of local people, and the lack of successfully implemented developmental projects. These are unfortunate grounds that contribute to the social dilemma and social trap issue in Papua Barat. The second and third perspectives on trust mentioned by Worchel (1979 as cited in Lewicki 2006) are no doubt affected and adds to the problem of insufficient trust that indigenous peoples have towards NGOs.

Findings with regards to trust towards NGOs from both research areas show that indigenous peoples, in general, are not fully informed of what NGOs are and what there purpose is. Some of the respondents did show knowledge with regards to the previous NGOs that had been established in *Kampung* Mokwam, but the purpose of NGO presence in Mokwam to-date is still not clear amongst the indigenous peoples. Respondents state that NGO´s arrive, some of them set up programmes, the programmes fail, and then it is time for a new NGO. The only programme that the indigenous peoples of Mokwam were happy about was that of the butterfly farming that the WWF set up in collaboration with YBLBC. However, even that went sour when the peoples found out that they were being cheated with regards to payments for catching the butterflies. This information was obtained in Manokwari town through social networks of the peoples. The Ministry of Forestry respondents confirmed that the indigenous peoples had a right to be unhappy due to a lack of management and finally, the project was shut down. A result of this unfair treatment towards the indigenous peoples resulted in violence against the NGO in *Kampung* Mokwam, as stated in the findings.

Indigenous peoples in Manokwari *Utara* also voice their unhappiness with regards to NGOs. A respondent in Pami stated that he had not heard of the UNDP who claim to have a project in the area. During the focus group discussion in Saobeba, all ten respondents confirmed that they did not receive help from NGOs in the area, as their opinion was that NGOs tended to stay in the areas of Manokwari town and its immediate outskirts. The opinion on lack of NGO involvement in the area was also confirmed by the informants in the villages of Nuni and Mubrai.

The reasons for the lack of NGO involvement are not known, as the research did not encompass the specific issue of NGO involvement. However, according to the respondent at UNIPA, NGOs in Papua Barat lack human capital in the sense that there are few that are competent in the running of NGOs and implementation of development projects. There are few that are educated at the operational set-up phase of projects and at the implementation through local participation phase. In addition, the respondent at UNIPA stated and acknowledged the lack of collaboration between the Faculty of Forestry at UNIPA, NGOs, and governmental institutions. Funding is not an issue, according to this respondent, as foreign donors are more than willing to donate funds to contribute towards forest conservation in Papua Barat. However, lack of collaboration, corruption within NGOs, and the lack of

knowledge with regards to sustainable developmental programmes hinder collaboration of such organizations and the indigenous peoples of Papua Barat.

Figure XVI displays the importance of effective civil society involvement in the build-up of social capital. NGO involvement begins already at the initial stages of protecting indigenous rights through respecting cultural patterns, indigenous social institutions, and protecting ethnic identity of these peoples. In doing so, NGOs will gain the trust of the peoples and be able to assist them further in the build-up of physical capital as a major step towards gaining empowerment though social capital. However, NGOs must ensure inclusion of indigenous peoples within their programmes as this will extend the social networks of the groups and empower them to make choices with regards to their livelihoods and actions that contribute to deforestation and degradation. Figure XVI directly links social capital to the issue of livelihood, as was also explained in the first section, thus linking the involvement of NGOs as an important actor in bringing about livelihood changes in the form of alternative choices and linking the indigenous peoples to REDD.

NGOs of a local, national, and international nature must be able to collaborate with one another, other civil society institutions such as UNIPA, and governmental institutions. This collaboration is of great importance, as it will ensure the spread of knowledge with regards to REDD and also in the inclusion of indigenous peoples in REDD. Failures of certain ways of NGO involvement in one research area may be shared in order to improve the programmes available to the indigenous peoples in addition to the indigenous particiapation levels. A direct link is thus, also made from the formation of human capital to the choices presented to and the willingness of indigenous peoples to engage in alternative REDD livelihoods, thus making NGOs actors that directly link indigenous peoples to REDD. The example from Mali mentioned in chapter IV illustrates how NGOs play a vital role in collaborating with local communities and what measures NGOs actually are capable of taking in order to reach indigenous peoples in remote areas of a nation. Research used to identify migrant users and their concerns can be linked to the Papua Barat setting, as the rural inhabitants of Papua Barat may not have access to towns and cities. The inclusion of local participants in management councils gives important key players the empowerment to self-govern through voicing opinions. In making information available in different languages and formats, NGOs in Mali have shown their willingness to reach out to the inhabitants of the rural areas. The availability of information in different languages in Papua Barat is also essential as the indigenous communities

The past and prevailing social dilemma with regards to non-trust between NGOs and other civil society organizations, governmental institutions and indigenous peoples challenges the ability of indigenous peoples to be able to collaborate with organizations that they have developed a lack of trust towards due to historical events. Figure XVI includes the involvement of international organizations within the circle of trust, as all respondents mentioned the need of having international monitoring of local NGOs and their programmes in Papua Barat. The respondents were aware of their lack of trust towards NGOs in Papua Barat and thus needed foreign assistance in the set-up of and in ensuring sustainability of NGO programmes. The trust circle is placed at the core of Figure XVI, illustrating the importance of trust in reducing the social trap in Papua Barat.

VII.IV The Social Trap in Papua Barat

'The big question for 2010 – and the whole century – is whether the world´s civilizations, religions, and cultures will finally depart from their persistent patterns of conflict. (…) People all over the world are beginning to realize that cooperation yields dividends not only within civilizations but also between and among them. (…) The number of countries adhering to religious freedom and the portion of global citizens living under open, pluralistic societies are at their highest ever. Hence, political and religious figures must speak out forcefully against discrimination and intolerance – which they do not do often enough. For millennia, our archipelago has been home to many currents of civilization. We are convinced that tolerance-building, an urgent task for 2010, must be at the center of the world´s 21ˢᵗ-century agenda, just as much as nation-building preoccupied the 20ᵗʰ century'.
        – Susilo Bambang Yudhoyono, President of Indonesia   (Yudhoyono 2009:79)

As the quote suggests, Indonesia has an urgent task that involves tolerance-building as a goal for the 21ˢᵗ century. The nation´s diversity poses challenges to the administration through a vast array of opinions, wants, and needs. This urgent task of tolerance-building can thus be interpreted as the urgent need for collective action through a reduction of the social trap and the enhancement of trust. As after independence when Indonesia needed to international recognition as an independent state, Indonesia still needs international recognition due to its ownership of a large proportion of the globes common-pool rainforest resources. The nation is seeking to gain this recognition by its involvement in REDD, however, involvement alone will not gain recognition. Active and efficient involvement of REDD that produces results through decreasing rates of deforestation and degradation, thus reduction of CO_2 emissions, may bring international recognition, but cannot be achieved without active inclusion and participation of the indigenous groups of the nation.

The issue of trust, or rather distrust, is not a recent phenomenon in Indonesia or in Papua Barat. Given the extreme differences of the indigenous groups of Papua Barat in contrast to the inhabitants of the administrative island of Java, the notion of tolerance-building may be interpreted as a continuation of the struggle to *integrate* the Papua Barats into Indonesian society. Negative connotations of the indigenous peoples of Papua Barat were already presented by the Dutch when the peoples were addressed as *stone-aged* and *primitive* in 1828. And in 1969, in acquiring the province of Papua Barat, the government of Indonesia also acquired cultural and administrative issues that are still evident today as Papua Barat culture differs greatly from that of the administrative island of Java.

In a milieu where there is a general lack of trust between individuals of society, scarcity of access to both good and services, and challenges linked to geographic accessibility, the rural inhabitants of Manokwari district bear the larger part of the burden as citizens of an under-developed Papua Barat. 'To possess social capital, a person must be related to others, and it is those others, not himself, who are the actual source of his or her advantage. However, the motivation of others to make resources available on concessionary terms is not uniform' (Portes 1998:7). Corruption issues in Indonesia and Papua Barat make it difficult for indigenous peoples to empower themselves to govern their forests. In addition, property rights issues in Papua Barat are yet to be properly defined and cultural differences and a lack of trust are deeply rooted within the indigenous peoples of the province. For example, the language

used by most of the indigenous Papua Barats strongly suggests that they do not see themselves as Indonesians. They speak of Indonesians as government officials and those that come from the administrative island of Java. This distinctive social dilemma has been caused by historical events that have affected the first perspective on trust stated by Worchel (1979). Indigenous peoples of Papua Barat are not willing to trust the Indonesian government as a result of historic events that have threatened ancestral territories, ethnicity, and cultural identity. 'According to psychological research on how memory works, the more one tries to forget traumatic experiences such as deceit and discrimination, the more vivid they become' (Baddelely 1999 as cited in Rothstein 2005:13). The reminders of failing NGO and governmental programmes brings the lack of trust to go further to the second perspective whereby institutions are not trusted due to the corruption issues prevailing from the national level in Jakarta to the local levels of the district of Manokwari. Finally, the third perspective on trust that is defined by the expectations of another acting party is disrupted as the lack of trust in the first and second perspectives already contribute to the social trap in Papua Barat, i.e. a situation whereby individuals or actors acting within the intermediation of an organization are unable to cooperate to the benefit of all.

The trust circle at the core of Figure XVI illustrates the importance of trust-building through tolerance-building, as without trust, the success of REDD initiatives in Papua Barat is questionable. Rothstein (2005:22) defines efficient institutions as 'institutions that, to use an economic term, reduce transaction costs between parties with a mutual interest in interacting in repeated sequences, even if they have conflicting interests in the specific transactions'. Thus, efficiency through institutions may be useful in reducing the existing social trap that has existed for generations and still prevails. In confirming the importance of efficient institutions, Kristiansen (2004:1149) mentions that 'a reduction in social discontent can be achieved through policy measures that enhance levels of education and access to information for all citizens to create a 'level playing field' in economic affairs'. Kristiansand thus mentions the importance of social capital build-up through ensuring human capital. In looking at Figure XVI, the build-up of human capital and eventually social capital must be based on the fact that physical capital exists (Coleman 1988). In emphasizing a level playing field, Kristiansen moves further to the choice of alternative livelihoods that indigenous peoples will gain if given the opportunity to participate, thus linking human capital enhancement to the choice of alternative livelihoods. The fundamental base for social capital build-up is trust.

In following Kristiansen´s (2004) trail of a level playing field, there are a number of factors that support the circle of trust at the core of Figure XVI. These factors are vital in aiding to the reduction of the existing social trap. Foreign involvement in trust building seems to be necessary in reducing the gap between the government and the indigenous peoples of Papua Barat. The gap is a result of the corruption in governmental institutions and local NGOs that cause the social trap. In reducing the trap, national REDDI approaches have to be coordinated with international REDD approaches where accountability and transparency ought to be core prerequisites. NGO involvement strengthens ties in social networks that in turn aid in building social capital, which is vital for a level playing field that ensures indigenous peoples participation. Worchel´s (1979) three perspectives on trust ought to be the guiding perspectives of reducing Rothstein´s (2005) concept of the social trap, which in fact, is an existing trap in Papua Barat, and is one that hinders development in the Papua Barat provinces today and will continue to do so if not addressed. Papua Barat actors from the provincial to the local level are aware of deforestation and its impacts on the environment and that in itself can be a starting ground for a level playing field (Kristiansen 2004) for ensuring successful

implementation of REDD initiatives through indigenous empowerment and the break-down of the social trap.

VII.V REDD – Conservation through Governance & Participation

'Keeping trees standing lock up carbon, maintains biodiversity and provides the energy-guzzling industrialized countries with a cost-effective way to offset their carbon without changing their lifestyles' (Adams 2009:245). Forest management schemes incorporated with REDD require good data, skills and systems to measure changes in forest carbon. However, this in itself is a major challenge in implementing REDD in Papua Barat. As mentioned by the respondents at the Ministry of Forestry, human capital is lacking at levels other than indigenous local levels. Knowledge with regards to REDD is scarce and the practical aspect of measuring carbon stocks seems to only be a far-fetched thought and not a reality.

Cox *et al.* (2009) argue that 'a negative view of expected individual behavior of those who jointly own assets has been compounded by a confusion stimulated by Hardin´s allegorical analysis of the 'Tragedy of the Commons', which was effectively open access and not common property' (Cox *et al.* 2009:958). Whether the rainforests of Papua Barat are common property resources or open access resources are one of many complicated twists with regards to the management of the forests in the province; ethnic rules of landownership clash with those of the government.

Selfish interests at local, provincial, national, and international levels lead to the destruction of rainforests in Papua Barat, as appropriators deplete rainforest according to their individual needs. Ophuls (1973, as cited in Ostrom 1990) suggests that collaboration between the different appropriators will never be possible due to selfish interests, thus requiring a centralized government to control the common-pool resources of Papua Barat. Hardin (1968) also shares this view of a centralized government and both compare the need for a centralized government to that of Hobbes´ (1651) Leviathan. However, the theory of a centralized government and failure of forest management under such a regime is illustrated in failure of Nepal´s forest management schemes until after decentralization was introduced. An involvement of local communities and lucrative legal policies ensured sustainable forest management and Nepal gained international recognition for its forest management policies.

Although Indonesia implemented Law No. 21/2001 and granted Papua Barat Special Autonomy during the period of decentralization, the implementation of the law has not been satisfactory. This lack of implementation adds to the social trap dilemma that Indonesia faces. Legal policies must be adhered to and must involve all citizens of the nation. As Figure XVI illustrates, trust is the core to successful implementation of CPR management through good governance, which in turn, will ensure successful implementation of REDD initiatives within the provinces of Papua Barat. In analyzing REDD as a form of CPR management, Table V below illustrates Ostrom´s (1990) CPR design principles within the Papua Barat setting. REDD concepts are also included in order to illustrate how CPR management and REDD initiatives are interlinked. In setting the design principles within the Papua Barat setting, issues with regards to governance and trust highlight the social trap, thus emphasizing how trust is a precondition for the successful implementation of REDD initiatives in Papua Barat.

**CPR Design Principles Incorporating REDD in the Papua Barat Setting**
(Based on Ostrom 1990:90)
Table V

1. ***Clearly defined boundaries:*** *Individuals or households who have rights to withdraw resource units from the CPR must be clearly defined, as must the boundaries of the CPR itself.*

- In the Papua Barat setting, there is a clear lack of clearly defined boundaries and land-ownership rights with regards to forest area. The indigenous peoples have their own local laws as does the Indonesian government.
- It is vital that boundaries are clearly defined, not only for the purpose of appropriation or non-appropriation, but also with regards to REDD monitoring. Carbon emissions are estimated from area of deforestation and degradation, thus making boundary definition vital. (Wertz-Kanounnikoff *et al* 2008)

2. ***Congruence between appropriation and provision rules and local conditions:*** *Appropriation rules restricting time, place, technology, and/or quantity of resource units are related to local conditions and to provision rules requiring labor, material, and/or money.*

- Unfortunately, lack of proportional equivalence between benefits and costs are one of the causes of distrust that local Papua Barats have towards the government. Local conditions are not taken into consideration at the rural level, nor are provincial conditions taken into consideration at the national level.
- Corruption at the governmental and institutional levels may make congruence between appropriation and provision rules and local conditions a difficult task. Without honest NGO involvement, the indigenous peoples will not be able to detect the corruption as they lack social networks within their rural settings.

3. ***Collective-choice arrangements:*** *Most individuals affected by the operational rules can participate in modifying the operational rules.*

- The general attitude of so-called 'lazy' and uneducated local Papua Barats brings about non-involvement of indigenous Papua Barats as they are seen as 'unfit' to participate in concepts such as REDD. NGOs and governmental institutions (at national and provincial levels) give this impression and disrupt collective action by increasing the social trap.
- Indigenous individuals affected by the operation rules need to be empowered in order to participate in addition to the fact that governmental and nongovernmental institutions include indigenous involvement. This will increase trust levels and decrease the aspects of the social dilemma evident in Papua Barat today.

4. ***Monitoring:*** *Monitors, who actively audit CPR conditions and appropriator behavior, are accountable to the appropriators or are the appropriators.*

- The lack of social capital in the rural areas of Manokwari makes this a challenge. Social capital must be built through education and training with the aid of honest NGO involement.
- Wall-to-wall mapping requires human capital both at the local indigenous levels as well as university levels and governmental institutional levels. NGO involvement is vital in monitoring activities through empowering indigenous peoples. NGOs in Papua Barat also lack human capital and knowledge with regards to efficient common-pool resource management and building social capital at all levels deems necessary.
- National REDDI MRV approaches would need to be implemented in Papua Barat after collective-choice arrangements are in place, i.e. when actors at all levels have reached a trustworthy agreement for collaboration.

5. ***Graduated sanctions:*** *Appropriators who violate operational rules are likely to be assessed graduated sanctions (depending on the seriousness and context of the offense) by other appropriators, by officials accountable to these appropriators, or by both.*

- The issue of governmental corruption must be addressed with regards to graduated sanctions. A lack of monitoring will give a distorted image of violations of rules-in-use.
- Over-staffed police and military units in Papua Barat ought not to be those that issue sanctions, as their presence in Papua Barat also partially contributes to the existing social trap.
- National sanctions would include a lack of income REDD payments due to lack of PES,

however, sanctions at subnational levels ought to be agreed upon by the actors involved in PES.

6. ***Conflict-resolution mechanisms:*** *Users and their officials have rapid access to low-cost, local arenas to resolve conflict among users or between users and officials.*
- Cultural and social differences between civil servants, governmental institutions, and indigenous peoples of Papua Barat pose a great challenge with regards to conflict-resolution mechanisms.
- Historical events with regards to how Indonesians in general view indigenous Papua Barats, human rights violations, and the abuse of indigenous Papua Barats induce a feeling of colonization in present day Papua Barat. Although current colonization is by Indonesians and not the Dutch. This displays a social dilemma that affects both the first and third perspectives on trust mentioned by Worchel (1979, as cited in Lewicki 2006).

7. ***Minimal recognition of rights to organize:*** *The rights of users to appropriators to devise their own institutions are not challenged by external governmental authorities.*
- Is the Indonesian government willing to delegate such rights to indigenous peoples groups? This would mean having to 'loosen up' with regards to control over Papua Barat.
- This would require honest and efficient implementation of Law No. 21/2001 involving Special Autonomy in Papua Barat. This law has not been efficiently implemented as per today and implementation needs revision.

8. ***Nested enterprises*** **(for CPRs that are parts of larger systems):** *Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises.*
- 'A subnational or project approach allows for early involvement and wide participation, and is attractive to private investors. However, this approach may suffer from leakage (increased emissions outside project boundaries) and cannot address the broader forces driving deforestation and forest degradation' (Angelsen *et al.* 2008:40).
- The nested approach in REDD integrates the national and subnational approaches and is what best suits the Papua Barat setting.
- Multiple layers of nested enterprises may pose a threat with regards to the high levels of corruption present in governmental institutions in Indonesia. REDD payments may seep through loopholes in various multiple layers of nested enterprises. This is clearly visible in the numerous districts and sub-districts present in Papua Barat today and having fewer layers of nested enterprises is perhaps the best solution for Papua Barat.
- Finally, multiple nested enterprises may also contribute to the disappearance of REDD funds, thus making it difficult for indigenous peoples to ensure that they receive funds. On the other hand, due to the issues of corruption in Indonesia, partial REDD payments for PES carried out by indigenous peoples may be in the form of infrastructural development and benefits instead of monetary payments. This would ensure a loop effect where PES carried out by indigenous peoples would come back to the communities through social capital formation.

As illustrated in Table V, CPR management and/or REDD implementation will not be an easy task in the case of Papua Barat. Exclusion of appropriators is extremely difficult as forest ownership is not well defined, thus not fulfilling the first of the design principles illustrated by long-enduring CPR institutions as presented by Ostrom (1990). This lack of definition brings about a lack of trust between the government and the indigenous peoples as both parts claim ownership of the forests. 'A self-governed forest resource is one where actors, who are major appropriators from the forest, are involved over time in making and adapting rules within collective-choice arenas regarding the inclusion or exclusion of participants, appropriation strategies, obligations of participants, monitoring and sanctioning, and conflict resolution' (Ostrom 1998:1). However, it is not only the first of the design principles illustrated in the table above that seems to pose a challenge with regards to common-pool resource

management in Papua Barat, but each principle bears with it challenges with regards to implementation of successful REDD initiatives in Papua Barat.

The case of CPR management within forest communities in India illustrates how joint efforts of forest management implementation can successfully bring about sustainable forest management. However, this requires that the government is willing to delegate responsibilities to local communities and give them credit for their efforts, as it is these rural peoples that are most capable of managing their own ancestral lands.

In the case of Papua Barat, unfortunately, it is just that which is lacking. The lack of community participation and local empowerment in the research areas brings about a dissatisfaction amongst the indigenous peoples and thus, is a factor contributing to the social trap. Collaboration between the indigenous peoples and the government is lacking and 'so the state has increasingly taken responsibility for natural resource management, largely because of a mistaken assumption that these resources are mismanaged by local people (Ostrom, 1990: Scoones, 1994: Pretty & Pimbert, 1995; Leach & Mearns, 1996; Pretty & Shah, 1997; Ghimire & Pimbert, 1997; as cited in Pretty & Ward 2001:210). The mistaken assumption contributes to the existing social trap in Papua Barat, thus revealing a lack of trust towards the indigenous peoples of Papua Barat thus disregarding their national identity within the archipelago. The mistaken assumption also leads to non-coherence with Ostrom´s seventh design principle illustrated by long-enduring CPR institutions. The seventh principle states that 'the rights of users to appropriators to devise their own institutions are not (should not be) challenged by external governmental authorities' (Ostrom 1990:90). In taking up the case of forest conservation in Mokwam, where the government would like to implement forest conservation schemes without taking into consideration the suggestions of the indigenous peoples is only one example where indigenous peoples are not empowered in CPR management objectives, but are expected to carry out the environmental services. In not encouraging indigenous peoples´ ideas and use of indigenous knowledge for establishment and implementation of common-pool resource management, governmental institutions ignore the subcultural characteristics of the indigenous peoples of Mokwam, thus ignoring ethnic resources. Kristiansen (2004), in his model, displays how the incorporation of subcultural characteristics and social networks in addition to entrepreneurial resources is highly dependent on the level of trust between actors.

Obviously, the Indonesian government is still facing the task of trusting its fellow Papua Barats as is the case with the Papua Barats when it comes to the Javanese of the administrative island. The government struggles in gaining the trust of the Indonesian people in Papua Barat today, as they did in other regions of the archipelago after the years of independence. The trust issue hinders collaboration between actors and slows down the process of social networking and the effects of deforestation and degradation continue to take their toll. However, collective action is not impossible in Papua Barat. The example of *kopermas* illustrates that collective action is possible in Papua Barat and can be used as an example to bring about collective action to manage the common-pool resources of Papua Barat, instead of depleting them.

REDD initiatives can be administered in Papua Barat through numerous measures of good governance which in turn will ensure self-governance of indigenous peoples through empowerment and increased social capital. The most important attribute of good governance is that of the participatory characteristic which has been lacking in the Papua Barat setting to date. The participatory characteristic ensures an open involvement of all actors where the

willingness to participate in REDD is organized by the actors, legitimate institutions and/or representatives. Empowered indigenous peoples means that these citizens are aware of their choice to contribute. In the event that they do wish to contribute, they are also empowered and have the choice of how to and with how much to contribute. Rural indigenous peoples of Papua Barat need to be empowered in order to make the active choice of wanting to contribute in REDD by evaluating their possible gains in choosing to act collectively with the government and local NGOs. This sort of empowerment can only be brought about through providing the indigenous peoples with honest knowledge about REDD, as mentioned by the respondent at UNIPA. Openness with the indigenous peoples will also reduce the social trap and increase trust. By involving the local government institutions and having the central government present in REDD implementation in Papua Barat a step-by-step implementation process undertaken over a period of time is necessary.

In having stated that a slow implementation process over a period of time is necessary for the introduction and implementation of REDD in Papua Barat, reference is given to the model in Figure XVI where the REDDI Readiness Phase is placed as is. Although Masriputin (2010) states that the Readiness Phase for REDDI is from 2009-2012, the likelihood of implementing Phase III of REDDI in 2012 in Papua Barat is highly unlikely. In fact, Figure XVI has placed the REDDI Readiness Phase as is and without a timeframe due to the fact that the Readiness Phase of REDDI in Papua Barat cannot be successfully and sustainably implemented without factors of social capital, alternative livelihoods, and most importantly, trust, in their rightful places. The Readiness Phase must be incorporated in the build-up of social capital, local empowerment and finally trust in order to ensure sustainable implementation through collaboration of all actors involved.

Although the successful implementation of REDD initiatives in Papua Barat over time is possible, the key to REDD is to ensure its sustainability, i.e. that which ensure the economic and social development of the indigenous peoples of Papua Barat, reducing deforestation and degradation and thus reducing carbon emissions, and finally, ensuring REDD payments as an alternative payment method at national and local levels. As Fukuyama (1995) states, the ability of strangers to trust one another and work together in new forms of organizations is the most important form of sociability from an economic standpoint. Thus, sustainability can be achieved through trust and self-governed indigenous peoples of Papua Barat.

In having discussed the main aim of this thesis and the relevant research questions, the next chapter rounds of the thesis by concluding and presenting recommendations.

CHAPTER VIII

Conclusions & Recommendations

This research focuses on the Hatam-Moulei and Arfak indigenous peoples of Papua Barat and their involvement in deforestation and degradation activities. The main focus of the research is how indigenous peoples can be empowered to actively participate in REDD through positive collective action brought about by trust. The five research questions of the thesis address the indigenous peoples dependency on the rainforest and how this is reflected in their livelihoods. The questions also address the ways in which these peoples engage in deforestation and if they are aware of the environmental impacts of their activities. The third research question addresses how these indigenous groups have reacted to nongovernmental developmental programmes in the past. Issues with regards to distrust between indigenous peoples, governmental institutions, and nongovernmental organizations and how this distrust contributes to the existing social trap are also explored. Finally, the question of how REDD initiatives can be administered in Papua Barat by building social capital through empowerment of indigenous peoples whilst ensuring collaboration between the groups, the government, and nongovernmental organizations is addressed.

The main findings of this research are that the Hatam-Moulei of *Kampung* Mokwam and Manokwari *Utara* are forest dependent communities in that they are farmers and hunters and resort to the forest for daily needs such as fruit and plants. However, the Hatam-Moulei of Mokwam is a hundred percent forest dependent as opposed to the Arfak indigenous peoples of Manokwari *Utara* who have options of other livelihoods such as fishing and business, as they are closely situated to a major road and the northern coastline of Manokwari district. In being forest dependent, both peoples contribute to deforestation and degradation and the

majority of the respondents are aware of the impacts of deforestation on the environment at a local scale. Forest conservation programmes and other developmental programmes initiated through nongovernmental organizations have not been successful and the general impression of the respondents with regards to such organizations is that they are not inclusive of the local communities, are corrupt, or have never initiated projects in some respective villages. The issues of distrust with regards to NGOs are also seen with regards to governmental institutions from the national to the local levels. Finally, findings with regards to REDD implementation in Papua Barat reveal that indigenous peoples are willing to involve themselves in REDDI, but demand that international organizations carry out monitoring activities and are also involved in REDDI to ensure that corruption issues do not lead to exploitation of the indigenous.

Based on the research, the policy recommendations to the solution of successful and sustainable implementation of REDD initiatives in Papua Barat are to incorporate CPR design principles that include active participation of indigenous peoples, governmental institutions, and NGOs. The actors involved need to be open to the fact that each involved part has invaluable knowledge that is essential to incorporate in CPR management, and finally REDDI initiatives. Further, social dilemmas such as issues related to poor infrastructure must be addressed. The unfortunate view of the indigenous peoples of Papua Barat, originating from colonial times, still prevail today and aid in weaving the complex web that strengthens distrust and increases the social trap. The Indonesian government must take an active role in revisiting transmigration policies that increase the levels of police and military forces in Papua Barat. In addition, greater value must be given to the existing social knowledge within ethnic peoples of Papua Barat. This is vital in the implementation of REDD initiatives, as the CPRs of Papua Barat are inhabited by indigenous peoples and the Indonesian government must acknowledge its dependency on indigenous cooperation in order to ensure sustainable REDDI and gain REDD payments, both at a national and subnational levels. This acknowledgement must be followed by legal and political actions and policies that increase social capital through infrastructural improvement in rural Papua Barat.

Although the concept of REDD aims at presenting a somewhat standard solution to the global issue of CO_2 emissions caused by deforestation and forest degradation, what is lacking is a link to respective social contexts. What is needed in addition to REDDI are strategies that relate to the different settings of the vast archipelago of Indonesia. REDDI implementation in Kalimantan may not necessarily be applicable to the Papua Barat setting. The historical, social, and political contexts of each CPR area are unique, as Ostrom (1990) states. In addition, it should be acknowledged that indigenous peoples are not the only cause of deforestation. Concessions given by the national and provincial governments in Papua Barat need to be assessed in order to ensure ultimate success in REDD implementation. It would be a shame if the indigenous peoples, NGOs, and governmental institutions managed to establish a mutual trust and work collectively towards REDD initiatives only to learn that concessions have been granted in Jakarta for the clearing of rainforests in Papua Barat. The motivation behind concessions given at the national level gives a perspective for future research. This future research should also include a thorough assessment of the intentions of implementing Law No. 21/2001, the actual implementation, and how well it is enforced. Law No. 21/2001 should be thoroughly analyzed with a perspective on REDD and Indonesian global commitments with regards to deforestation. Is Law No. 21/2001 a *puppet independence* granted to Papua Barat by the administrative island of Java and if so, how will this hinder trust build-up and future REDD initiatives in Papua Barat?

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