

ABSTRACT

Title of Dissertation:

**A FOREST OF COMPLEXITY: AN ETHNOGRAPHIC
ASSESSMENT OF REDD+ IMPLEMENTATION IN
INDONESIA**

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2016***

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Reducing Emissions from Deforestation and forest Degradation (REDD+) is a global initiative aimed at curbing carbon emissions from forest cover change.

Indonesia, one of the most biodiverse places on the planet with the third largest extent of tropical forest, has been extensively involved in REDD+. Despite commitments from the government of Indonesia and the international community, the deforestation rate has not stabilized or decreased in the years since REDD+'s introduction in 2007. As of 2012, it was arguably the highest in the world. While there is an extensive body of literature on REDD+, the need for grounded observations from the field could clarify existing challenges and inform future pursuits.

This dissertation presents the results of over two years of ethnographic research in Indonesia on REDD+. Qualitative data collection techniques such as participant observation, site visits and interviews provide a rich tapestry of data that

was analyzed in combination with scholarly literature and policy. The research finds that despite a number of changes to laws and regulations resulting from REDD+ implementation in Indonesia, weak institutional capacity and corruption have negated gains. The results of a case study of three REDD+ project sites identify important criteria at the root of success or failure: finance, community, boundary enforcement, monitoring, and outcomes of attempted carbon sequestration and biodiversity preservation. Challenges identified for each criteria include a lack of sufficient funding opportunities; inability to enforce boundaries due to corruption; and lack of a solid plan for involving communities. Carbon sequestration and biodiversity preservation results were mixed due to lack of monitoring and problems with encroachment. Finally the results of the qualitative data collection with stakeholders indicates a crisis of confidence among REDD+ stakeholders; cultural barriers to communication; a disconnect between international rhetoric and local reality; corruption and governance issues resulting in a lack of pathways for project implementation. I argue that changes must be made to Indonesian policy, monitoring technologies must be utilized, and stakeholders need to address some of the problems discussed here in order to save REDD+ from crisis.

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Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2016

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Dedication

I dedicate this dissertation to the Apneista Family for helping me get to magical depths on just one breath.

Acknowledgements

This dissertation, and the work it represents, could not have been completed without the guidance and support of a great many people. I would like to sincerely thank Dr. Klaus Hubacek, my academic advisor, to whom I am indebted for his guidance, patience and support and whose sage advice and kind demeanor helped lead me through graduate school. In particular I want to thank him for his reliable support while I was in the field and in reviewing the many, many drafts that lead to this dissertation. I would also like to thank my committee members: Dr. Julie Silva for being such a supportive advocate; Dr. Matthew Hansen for his guidance and wisdom on Indonesia; Dr. Shirley Fiske for being such a wise and kind role model through the PhD and my MA; and Dr. Michael Paolisso whose guidance through my MA helped me get to where I am now. Their kindness and abilities to help me understand a wide range of perspectives and domains has been remarkable, and I am indebted to their willingness to teach and work with me.

In Indonesia I benefitted greatly from support of Dr. Achmad Nurmandi, Dr. Eko Purnomo, and Dr. Rahmawati Husein at the Universitas Muhammadiyah Yogyakarta and many other colleagues and scholars. I am especially grateful to some of my Indonesian friends who took me into their homes and treated me as part of their family, in particular Tentyana Syempre and the many forest community members who let me live with them for many months. Their kindness and generosity were crucial to my experience in Indonesia. Additionally, I could not have completed any

of my research without the trust, confidence, and collaboration of many of the people of Indonesia.

I would also like to thank my parents, Thomas and Victoria Enrici, and the rest of my family for their constant love, support and encouragement. I would like to thank my friends for encouraging, supporting, and at times, challenging me intellectually as I made my way through this process. In particular, I would like to thank Kristina van Dexter, Anna Britain and Trevor Olexy for caring for Hobbes during the two years that I was away from home. Thanks to Hobbes for providing me with constant love and a bit of fun throughout the days while I was working on the writing of this dissertation.

Dissertation fieldwork was conducted with the support of a Fulbright U.S. Student Fellowship, and a Dean's Dissertation Fellowship from the Graduate School, University of Maryland.

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List of Abbreviations

APL	(Areal penggunaan lain) area for other uses, or non-forest land
BINGO	Big International Non Government Organization
bupati	District Head
CCB	Climate, Community and Biodiversity
DANIDA	Danish International Development Agency
ERC	Ecosystem Restoration Concession
FAO	Food and Agriculture Organization of the United Nations
FMU	Forest Management Unit
FORCLIME	Forest and Climate Change Programme
FPIC	Free, prior, and informed consent
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoI	Government of Indonesia
HL	(Hutan lindung) Protection Forest
HP	(Hutan produksi tetap) Permanent production forest
HPK	(Hutan produksi yang dapat dikonversi) Convertible production forest
HPT	(Hutan produksi terbatas) Limited production forest
hutan adat	customary or community forest
ICI	German International Climate Initiative
IETA	International Emissions Trading Association
IPCC	Intergovernmental Panel on Climate Change
kabupaten	District
Kawasan Hutan	Forest Area, or area under the authority of the Ministry of Forestry
KPA	(Kawasan pelestarian alam) Nature Conservation Area
KPK	(Komisi Pemberantasan Korupsi) Corruption Eradication Commission
KSA	(Kawasan suaka alam) Sanctuary Reserve Area
MoEF	Ministry of Forestry and Environment
MoF	Ministry of Forestry
MRV	Monitoring, Reporting, and Verification
NGO	Non Governmental Organization
NTFP	non-timber forest product
PES	Payment for Ecosystem Service
REDD+	Reducing Emissions from Deforestation and forest Degradation
UN	United Nations
UNORCID	United Nations Office for REDD+ Coordination in Indonesia
VCS	Verified Carbon Standard
APL	(Areal penggunaan lain) area for other uses, or non-forest land
BINGO	Big International Non Government Organization

Chapter 1: Introduction

In 2015, the world population reached 7.34 billion, and is predicted to reach 9.72 billion by 2050 (United Nations 2015). Many scientists are now referring to the current age as the “Anthropocene” because of the far reaching and often devastating effects that humans are having on the natural world (Crutzen 2006; Smith and Zeder 2013; Steffen, Crutzen, and McNeill 2007). Climate change (IPCC 2014) and biodiversity loss (Cardinale et al. 2012; Diaz and Duffy 2006) are among the most concerning of these human-induced changes. Deforestation is a major contributor to annual anthropogenic carbon emissions (IPCC 2014) and a good deal of biodiversity loss is directly linked to deforestation (Allnutt et al. 2008; Brook, Sodhi, and Ng 2003; WWF Indonesia 2008). Carbon sequestration and other forest ecosystem services, such as erosion prevention and water filtration, are essential to the survival of the human species and cannot be replicated through technology or human ingenuity (Nasi, Wunder, and Campos 2016). Furthermore, 1.6 billion people, 25 percent of the world’s population, rely directly on forests for their livelihoods (UN FAO 2016). In response to the role of deforestation in climate change and the importance of forests to humanity, the United Nations created a program called Reducing Emissions from Deforestation and forest Degradation (REDD+). REDD+ was designed to incorporate ecosystem services of forests, such as carbon sequestration, into the global economy by having developed countries pay developing countries to reduce carbon emissions from deforestation and forest degradation. Later iterations of the program came to include other co-benefits besides carbon sequestration, including biodiversity preservation and strengthening community rights (Holloway and Giandomenico 2009). Currently being implemented in 29 countries,

REDD+ is essentially a payment for ecosystem service scheme (Corbera 2012; Redford and Adams 2009) in which developed nations pay developing nations for some of the ecosystem services provided by forests. It is arguably one of the largest and most complicated environmental management plans of its kind, and offers hope and a potential solution for some of the concerns about high deforestation rates (Hansen et al. 2013) in many developing nations with tropical forests. The Intergovernmental Panel on Climate Change's Fifth Annual report states that REDD+ has the potential to help mitigate climate change, conserve biodiversity and preserve many of the other ecosystem services provided by forests (IPCC 2015). Despite the potential of REDD+, forest governance in many developing countries is very complicated (Transparency International 2011; Bolin et al. 2012) and the future of the program and its success remain uncertain (Mabele and Scheba 2016).

1.1 Selection of Indonesia

While REDD+ is being implemented in dozens of countries globally, Indonesia provides a crucial focal point for the possibility of REDD+ success or failure because of the extent of its forests, high deforestation rate (Hansen et al. 2013; Margono et al. 2014), and complexity of forest governance there (Enrici and Hubacek 2016). Moreover, along with the Amazon, it is arguably one of the places where REDD+ has gotten the most international financial support (Barrett and Goldstein 2016; Government of Norway and Government of Indonesia 2010) and attention. Over 40 REDD+ projects have been initiated, though some of these have already ended in failure. Even after the introduction of REDD+ Indonesia's deforestation rate has remained high (Margono et al. 2014; (WRI GFW) World Resources Institute Global Forest Watch 2016). Thus, as REDD+

implementation progresses there is a need for more research on the realities for the program regarding the Indonesian context, pathways for achieving successful outcomes, and challenges that are faced by those involved with REDD+ at all scales of implementation. The aim of this research is to explore the complexities of and possibilities for REDD+ in Indonesia in regards to the literature, policy, governance, and stakeholder experiences.

Indonesia has the third largest tropical forest in the world and one of the highest rates of deforestation globally (Hansen et al. 2013; Margono et al. 2014). It was chosen as the location for this research because of its high rate of deforestation, the complicated and interesting example it provides as a REDD+ pilot country, and because of the need for more thorough understanding of how to make REDD+ work there. REDD+ efforts began there in 2008 and since then, over 40 REDD+ demonstration activities have been initiated, though not all of these are still running. REDD+ plus thus presents opportunities for Indonesia to benefit financially from forest reserves and prevent more negative environmental and social consequences from further large-scale deforestation.

Despite the promise that REDD+ offers for Indonesia's forests (Busch et al. 2015), its implementation has been complicated as a result of the political climate in Indonesia (Enrici and Hubacek 2016; Galudra et al. 2011; Brockhaus et al. 2012), high demand for the resources within forested lands (Abood et al. 2014), and the country's history of questionable forest management practices (Transparency International 2011; HRW 2013). REDD+ projects in Indonesia, and elsewhere, have experienced various degrees of success and failure. Even though REDD+ in Indonesia began in 2007, many questions remain about how REDD+ will achieve what it is intended to. Identifying the

specific challenges and opportunities that exist for REDD+ is necessary to inform future policy and implementation efforts.

1.2 Evaluative Framework

This research was conducted using an applied geographical framework in order to be able to identify tangible solutions to the challenges of REDD+ implementation and forest management in Indonesia. An applied framework in geographical and anthropological research means using a problem-oriented approach in order to find practical solutions to social, economic, and environmental problems (Pacione 1999; Pacione 2004; Van Willigen 2002). In this study I approach the data with a problem-oriented approach by identifying what the problems and challenges are for REDD+ implementation in Indonesia. The applied framework was combined with a grounded theory approach and inductive coding to determine the important themes from the data collected (Corbin and Strauss 2007).

1.3 Intellectual merit

The intellectual merit of this project lies in its ability to contribute to knowledge about natural resource management and the complex systems within which those resources are situated. Ostrom (2009) proposes that research on complex social-ecological systems is needed in order to facilitate sustainability efforts, and that particular attention must be focused on the relationships between various levels of these complex systems across multiple scales. This research does just that through a multi-sited ethnography with stakeholders from different scales who work with the complex social ecological system of REDD+ and tropical forests in Indonesia. Furthermore, this research will provide a detailed account of REDD+ local realities as they fit, or sometimes do not

fit, within a national framework, thus advancing understanding on the implications of REDD+ for stakeholders and the potential of REDD+ to successfully reduce emissions and provide co-benefits. Through an intensive qualitative investigation of the complex social ecological systems of forest management and REDD+ in Indonesia this research will contribute to knowledge on the topics of natural resource management and REDD+ in the Indonesian context and globally.

1.4 Broader impacts

This research will have broader impacts by adding to the existing knowledge base on REDD+ in Indonesia. The results can inform the ongoing development of REDD+ in Indonesia and the dozens of other countries currently implementing the program. This research is desperately needed in the case of Indonesia, where corruption (Butt 2011; Dermawan et al. 2011), weak governance (Djogo and Syaf 2004; HRW 2013) and a rapidly developing economy based on resource extraction (Butler, Koh, and Ghazoul 2009; Carlson et al. 2013; Abood et al. 2014) have resulted in a complex and almost un navigable system for conservation efforts. Furthermore, the research presented in this dissertation reveals that in Indonesia there is a major crisis of confidence among REDD+ stakeholders, and a disconnect between the international/national and local levels that may lead to problems in project implementation and a failure to address the root problems of weak forest management. As a result, research such as this is urgently needed to help identify pathways for successful implementation. The broader impact of this research lies in its ability to directly address that need.

1.5 Structure of the dissertation

The aim of this dissertation is to give an in-depth and comprehensive understanding of REDD+ in Indonesia in order to identify challenges and opportunities for the program both at a country and global scale. This research is an exploration of how REDD+ is experienced by the people involved in the program and is based on the results of data collection that took place over a period of over two years in Indonesia.

Ethnographic research such as this provides an opportunity to get unique, in-depth, descriptive information about phenomena such as REDD+ (Bernard 2000; Bernard 2006). Literature and policy review were combined with qualitative data collection with REDD+ stakeholders operating at multiple scales. Triangulation of data in this manner can also lead to increased validity (Decrop 1999) and for the purposes of this research offers an opportunity to gain insight into the context of international and national discourses, policy, and reality on the ground.

Qualitative data collection was conducted with stakeholders of REDD+ in Indonesia, who for the purposes of this work are defined as someone who is, or has extensively been, directly involved in some aspect REDD+ program. Intensive fieldwork was conducted using qualitative ethnographic methods including visits to three major REDD+ project sites described in more detail in Chapter 3, participant observation, and semi-structured interviews. This data collection was complemented by a thorough and ongoing literature and policy review. Results were recorded, transcribed, and coded using grounded theory and inductive coding methods. Grounded theory and inductive methods use input from data collection in order build theory and results from the ground up instead of top down (Corbin and Strauss 2007; Charmaz 2006). Interview transcripts

were reviewed at multiple stages of data collection in order to inform major themes and topics for conclusions and analysis. More details about methods can be found in sections 2.3(p 16), 3.2.1(p 42) and 4.3 (p 91).

The overarching research question driving this dissertation is: What lessons can be learned from how REDD+ has developed in Indonesia? This overarching question is explored through three more specific research objectives:

Objective 1: Describe and assess the relevant policy and forest governance context in Indonesia, and how it has affected the implementation of REDD+ and the deforestation rate in Indonesia since the introduction of REDD+.

Objective 2: Identify and describe the major factors that help REDD+ projects in Indonesia achieve goals for carbon sequestration and biodiversity preservation. Assess these factors and the associated challenges for projects through the use of three case study project sites.

Objective 3: Describe the experience of REDD+ stakeholders in Indonesia from a multi-scale perspective to determine what the major challenges and opportunities are for the program.

This dissertation was written as three separate journal articles, intended for publication. The first of these has been published in a peer-reviewed publication and the second has been submitted for publication. As a result of this structure, there may be some repetition among the introduction, background, and methods sections of each chapter. This chapter, Chapter 1, provides an introduction to the dissertation and Chapter 5 provides a summary and conclusion for the entire body of work. Chapter 2 addresses

objective 1 by assessing the governance factors and policy context for REDD+ and the deforestation rate since the program's introduction. It touches on some of the major challenges for REDD+ that are created by the Indonesian governance context. These include weak, complicated, and confusing governance; widespread corruption; and ineffective policies including the Presidential moratorium on new industrial forest licenses. Chapter 2 was structured using initial analysis of fieldwork and informed by review of REDD+ literature and relevant policy and was published in June of 2016 in the peer reviewed journal *Energy, Ecology, and Environment*.

Chapter 3 focuses on Objective 2 and describes some major components of REDD+ projects that help to assess how carbon and biodiversity goals are achieved. Financial viability, community involvement, governing agency, and monitoring are described in detail in relation to the Indonesian context. Each of these factors are further explored through three case study sites from data collection in order to ascertain broader implications for REDD+ in Indonesia and elsewhere. Chapter 3 is primarily based on the results of fieldwork, particularly three REDD+ project site visits. Comparison of these as case study sites and the challenges they have experienced provide a basis for understanding how REDD+ activities occur on the ground. This article is in preparation for submission to *The Journal of Environment and Development*.

Chapter 4 presents the overall results of all of the interviews conducted for this research. The results are an alarming but honest description of the crisis of confidence that is endemic to those working with REDD+ in Indonesia. Other topics are also included, such as lack of pathways for implementation. The results of this chapter are essential for understanding the enormity of the challenge for REDD+ in Indonesia – if

very few of those working on REDD+ believe it can work or succeed, how will it persevere in such a challenging context? Chapter 4 uses some of the same data as chapter 3, but takes more explicit results from all of the fieldwork interviews and more broadly looks at what all of the respondents had to say about their experiences with the REDD+.

Chapter 2: Business as usual in Indonesia: governance factors affecting the acceleration of the deforestation rate after the introduction of REDD+

2.1 Introduction

Between 2000 and 2012,, 2.3 million km² of global forest cover was lost (Hansen et al., 2013). Deforestation is the second largest source of anthropogenic carbon emissions (Van der Werf et al., 2009) and is a major contributor to climate change (IPCC 2014). Forests provide invaluable ecosystem services, are hotspots of biodiversity, and a direct source of livelihood for 65 million people in Indonesia alone (Barber et al., 2002). The most recent data for Indonesia shows that the 2013 percent of total tree cover loss outside of plantations was 47.13 percent (537,294ha), and in 2014 it was 62.31% (928,765ha) (WRI GFW 2016). As one of the most biodiverse places on the planet, and with a deforestation rate that has been accelerating in recent years (Margono et al. 2014), forest governance reform is urgently needed in Indonesia.

However, due to the complex political, economic, and social systems that exist there implementation of policies and programs to improve forest management has proven to be highly challenging (Santosa et al. 2013). Indonesia is an emerging market with a growing economy. The activities that fuel this economic growth, such as palm oil plantations, mining, and timber extraction, are many of the same activities that result in deforestation and contribute to Indonesia's carbon emissions. While much of Indonesia's forest cover has already been lost, much more is in danger of conversion -- approximately 34.6 percent (~26.8 Mha) of the remaining forest cover is currently located within industrial concessions (Abood et al. 2014).

Reducing Emissions from Deforestation and Forest Degradation (REDD) is a global initiative developed by the United Nations for protecting forests and reducing carbon emissions.. The initial concept behind REDD is to offer developing countries incentives to reduce activities that lead to deforestation, therefore maintaining the enormous amounts of carbon sequestered by forests (UN FAO 2012) while still maintaining economic growth (UN REDD Programme 2015). REDD+ also aims to include other important benefits beyond carbon sequestration, such as biodiversity preservation and community forest rights, which are increasingly being recognized as essential for successful forest management (Stevens et al. 2014). And while initially the plan for REDD+ offered much hope, the challenges associated with its implementation have raised many questions. The beginnings of REDD+ implementation have already lead to doubts about its potential to achieve what it is meant to and stakeholder fatigue in many instances. Of central concern is what effect REDD+, and related activities, will have on deforestation rates in both the immediate and long term future as policies created to support REDD+ may have unintended effects on the ground. This is one of the most central questions to REDD+, which this article begins to address by exploring how forest governance in Indonesia may have contributed to rising deforestation rates since the introduction of REDD+.

Regardless of the doubts and challenges there have arguably been some benefits resulting from REDD+ -- since its introduction in Indonesia in 2008 the discourse about improving forest governance has at least initially increased (Cronin & Santoso, 2010), demonstration activities have been implemented, and Indonesia's government has made reforms to forest policy (Agung 2014). Yet, despite significant commitments from both

the Government of Indonesia (GOI) and the international community, towards REDD+ and the reduction of deforestation related emissions (Government of Norway & Government of Indonesia, 2010) the deforestation rate in Indonesia has accelerated over the period from 2008 to 2012 (Hansen et al., 2013; Margono et al., 2014). The results of the Hansen (2013) publication have been controversial as they included commercial forestry dynamics, however the subsequent publication by Margono et al. 2014 addressed these concerns by excluding commercial forestry dynamics and clearly defining “primary forest” within the boundaries of that study. While the long-term impact of REDD+ remains to be seen, it is known that in the initial years after the introduction of REDD+ the deforestation rate in Indonesia continued to increase and identifying what is behind this increase can help to guide future efforts towards REDD+.

2.2 Background: Deforestation and Forest Governance in Indonesia

Successful forest management in Indonesia faces many challenges, including corruption, overlapping authority and weak management practices (Center for Forestry Planning and Statistics & MoF 2009). As they are used here the term government shall refer to the actual officials and agencies appointed to the Indonesian government, while governance shall refer to the overarching policy and outcomes that come as a result of the actions of the Indonesian government. Many of the governance issues can be traced back to the Suharto Regime, the period when Suharto was President of Indonesia lasting from 1966 – 1998 and the subsequent decentralization. Throughout this period there was a highly centralized governance system with strict, often violent, enforcement (Anderson, 2001). Control of forests was often taken from indigenous forest communities and handed over to military powers or corporate interests (McCarthy, 2000). Before Suharto

gained power, the tropical forests on Indonesia's outer islands remained largely intact, but after his presidency began in 1966 it is estimated that over 40 million hectares were lost (Barr, 2001). After the Suharto regime, rough data from 2001 to 2014 indicates that approximately 11.4% (~18.5MHa) of remaining forests were lost during that time(WRI GFW) 2016) And after the end of the Suharto regime, Indonesia's government rapidly transitioned into a decentralized system and much of the authority over land use fell to regional authorities (McCarthy, 2004). The transition away from a strong central government led to a disconnect between the national government and regional governments, which allowed corruption to flourish at the district level and compounded the corrupt system already in place during the Suharto regime (Smith et al., 2003). Today, corruption is still a major problem for forest management in Indonesia (Dermawan et al., 2011; Human Rights Watch (HRW), 2013) and many residual land tenure issues from the Suharto regime remain (Neef et al., 2007). Furthermore, there is an overlap of national and regional authority in many regions, which combined with corruption and lack of institutional capacity leads to weak governance of forest areas (Brockhaus 2012). Even successful management of conservation forests can be problematic despite the fact that these areas are officially designated as protected forests or National Parks (Yuliani et al. 2010). These issues combined with Indonesia's rapidly expanding economy manifest in creating a pathway for high deforestation rates.

While an expanding population, growing economy, and weak governance are the indirect drivers of deforestation in Indonesia, expanding industries are the direct causes of deforestation – namely, palm oil, mining and timber (Kissinger et al. 2012). Forest fires, often set illegally and exacerbated by weak institutional capacity, are another major

cause of deforestation in Indonesia (Tacconi, 2003). Over 100,000 fires were recorded for the year 2015 and resulted in Indonesia emitting more carbon from fires alone than the entire United States economy (Harris et al. 2015a) and moving Indonesia from the world's sixth largest emitter of carbon to the fourth in just 6 weeks (Harris et al. 2015b). While these fires were made worse by conditions caused by an El Nino Southern Oscillation event, there are policies and aspects of governance which hamper the response to such fires (Tacconi 2003). Furthermore, they are sometimes intentionally and illegally set and precede the use of land for other interests such as logging or agriculture (Applegate et al. 2001; Fitzherbert et al. 2008). Once a forest has been degraded by fire, or other uses, it is no longer considered primary forest and more easily approved for conversion to palm oil or mining.

Palm oil is an integral part of Indonesia's expanding economy and the government's support of palm oil interests has the potential to conflict with other goals set for the reduction of deforestation (McFarland et al., 2015; Simamora, 2011). In the period from 1990 to 2010, the palm oil area in Indonesia increased by over 600 percent to a total of about 7.8 million hectares and during this time over 90 percent of deforestation from palm oil occurred in Sumatra and Kalimantan (Hansen et al. 2009), regions known for their high levels of biodiversity (Barber et al., 2002). From 2000 to 2010 palm oil on Kalimantan alone expanded by 278 percent, and 90 percent of palm oil expansion on the island from 1990 to 2010 occurred on forested land (Carlson et al. 2013). Sumatra and Kalimantan are also the two islands of Indonesia with the highest rates of forest loss, Sumatra lost 17.6 percent and Kalimantan lost 7.9 percent of their overall forest cover from 2000 to 2012 (Margono et al., 2014). Legal and illegal logging are also problematic

and global demand and high prices for timber have encouraged the government to formulate policies allowing for intensive timber harvesting (Kissinger et al. 2012). Much of the mining in Indonesia occurs in heavily forested regions and these operations are frequently established illegally in conservation areas or protection forest (Contreras-Hermosilla et al. 2005; Indrarto et al., 2012). While much of Indonesia's forest cover has been lost to these drivers of deforestation, much more is in danger of conversion – as of 2010, in Kalimantan alone, approximately 79 percent of the palm oil licenses covering 90 percent of the remaining forest on the island have not yet been activated (Carlson et al., 2013).

The recent acceleration of deforestation rates in Indonesia has happened in spite of a number of activities and commitments by the Government of Indonesia towards reducing deforestation. In 2009 the President of Indonesia, Susilo Bambang Yudhoyono, pledged to reduce emissions by 26 percent without help from other countries, and 41 percent with outside help, by the year 2020. On May 26, 2010, Indonesia's Government signed a Letter of Intent with the Government of Norway to implement REDD+ and meet certain deforestation reduction goals, with the promise of \$1 billion USD for the successful achievement of those goals. This agreement stated that Indonesia would develop a national REDD+ strategy; establish a REDD+ agency, and institute a moratorium on the sale of licenses for natural forest and peatland. And following the Letter of Intent in May 2011, President Yudhoyono declared the moratorium officially (Pres. Instruction 10/2011; Pres. Instruction 6/2013). In addition there has been increased discourse about, and reforms to, forest governance – increased recognition of customary official forest (Natahadibrata, 2013); designation of forest management units (FMU)

(Djajono & Siswanty, 2011); and efforts towards increased attention to transparency through the One Map program, which aims to create one source of information for all land use and land use licensing for all of Indonesia, something that does not currently exist (UKP4 2012). And in 2015 the new President, Joko Widodo, made an agreement with the Prime Minister of Norway to continue the efforts set forth by the initial letter of intent (Parlina, 2015). The following sections address some of the reasons why the deforestation rate in Indonesia has continued to accelerate during the initial period of REDD+'s introduction (Hansen et al., 2013; Margono et al., 2014) despite these actions.

2.3 Methods

This paper aims to identify a number of factors that contribute to the complexity of the overall forest management situation in Indonesia, and which may hinder efforts towards reducing the deforestation rate as brought forth by stakeholders of REDD+ and supported by the relevant literature. The basis and foundation for this paper are derived from over 18 months of fieldwork in Indonesia working with stakeholders of REDD+. The fieldwork included participant observation at dozens of meetings and 68 interviews at various scales of governance – international, national, provincial, district and local. Interviews were semi-structured, and were recorded and later transcribed by the lead author. Informants were chosen based on their involvement in REDD+ from various sectors including: government, civil service, non-governmental organizations (NGOs), multilateral development banks, research, private entities, and forest communities. The aspects of governance discussed here were repeatedly mentioned during the fieldwork in meetings or interviews, and thus emerged as major aspects of governance that contributed to the challenges of implementing REDD+ and forest governance in Indonesia. These

inputs are then further built upon with literature that exemplifies how these issues correlate with challenges to reducing deforestation and forest degradation in Indonesia since the introduction of REDD+. The next section will focus on several aspects of the complicated and sometimes confusing regulations surrounding forest governance, including the official forest use classification system.

2.4 Forest Classifications in Indonesia and defining “forests”

The legal designation of land as official forest (Kawasan Hutan) in Indonesia is not necessarily dependent on whether or not that area has actual forest cover or not, resulting in a dichotomy of forested areas that can be either institutionally recognized or non-institutionally recognized, as well as non-forested areas that are institutionally recognized as official forest. ‘Official forest’ (Kawasan Hutan) refers to land that has been officially designated by the Government of Indonesia as an area under the authority of the Ministry of Forestry (MoF). Within official forest areas there are further legal classifications of forest based on what that area may be used for – ranging from conservation to production forests for logging and agriculture. Indonesian Forestry Law (article 6 UU-41, 1999) dictates that official forest be categorized according to intended function, with three major categories: protection forest (hutan lindung), conservation forest (hutan konservasi) and production forest (hutan produksi). Production forest is then separated into three further categories: regular production forest (hutan produksi tetap), convertible production forest (hutan produksi konversi), and limited production forest (hutan produksi terbatas). Land that is outside the jurisdiction of the MoF is considered land for other uses (APL), and regardless of whether or not it actually has forest cover, it is not legally considered official forest (See table 1 for further clarification). This

classification system is part of a complex and sometimes confusing system of laws and regulations for forest governance, which contributes to weak institutional capacity and increases opportunities for corruption that lead to mismanagement of resources (Contreras-Hermosilla et al., 2005; Dermawan et al., 2011; Transparency International, 2011).

Table 1 -- Legal forest designation, use and area extent as of 2013

Forest type	Indonesian title and code	Indonesian forest code	Purpose/function	Possible management practices	Area extent (Million ha)	Percentage of forest loss by forest type for 2011/2012 (%)
Official forest	Kawasan Hutan		Area under the authority of the Ministry of Forestry	Varies depending on sub-category (e.g., HL, HP, HPK)	~ 131	
Sanctuary Reserve Area and Nature Conservation Area	Kawasan Suaka Alam & Kawasan Pelestarian Alam	KSA & KPA	Preserving the biodiversity of flora fauna and their ecosystem	Forest preservation	~ 22	~ 5.9
Protection Forest	Hutan lindung	HL	Protecting the water system to prevent flooding, control erosion, protect seawater intrusion and maintain soil fertility	Forest protection	~ 30.3	~ 7.3
Permanent production forest	Hutan produksi tetap	HP	Providing forest products	Selective logging, clear cutting	~ 28.8	~ 25.3
Limited production forest	Hutan produksi terbatas	HPT	Low intensity	Limited logging, very selective logging, very limited clear cutting post-logging silvicultural treatments	~ 27.6	~ 10.7
Convertible production forest	Hutan produksi yang dapat dikonversi	HPK	Logging, agriculture estate, other uses	Clear cutting	~ 15.5	~ 8
Non-forest land	Areal Penggunaan Lain	APL			~ 59.4	
Non-forest land with forest cover	Areal Penggunaan Lain With forest cover	APL With forest cover			~ 8.17	~ 42.5

Table 1. Kawasan Hutan, official forest, is institutionally recognized forest in Indonesia. This is further broken down into subcategories of Sanctuary Reserve Area & Nature Conservation Area (KSA/KPA), Protection Forest (HL), Permanent Production Forest (HP), Limited Production Forest (HPT), and Convertible Production Forest (HPK). Also included here is Non-forest land (APL), and non-institutionally recognized forest, which can be found on some non-forest land (APL). Data from (Indonesia Ministry of Forestry, 2014a; Margono et al., 2012).

2.4.1 Non-institutionally recognized forest

Indonesia has a significant amount of non-institutionally recognized forests and which are very vulnerable to deforestation. Also problematic, and as is discussed further below, some institutionally recognized forests have been converted to non-institutionally recognized forests since the introduction of REDD+. While the designation of an area as institutionally recognized official forest has the potential to offer some degree of protection from deforestation and degradation, even conservation and protection forest is still vulnerable to deforestation (Curran et al., 2004). However, non-institutionally recognized forest, or land with forest cover that is designated as land for other use (APL), is even more susceptible to deforestation and degradation as demonstrated by the high rates of deforestation documented in many of these areas (Margono et al., 2012). Non-institutionally recognized forest areas are more vulnerable to conversion because their designation as such means they are intended for other uses and this makes it easier to obtain land-use licenses for those areas. In recent years, an estimated one third of carbon emissions from Indonesia came from deforestation in areas that were legally designated as land for other uses (APL) with forest cover (non-institutionally recognized forests) (Gregersen et al. 2011). A study of deforestation in Sumatra demonstrated that deforestation in official forest land from 1990 to 2010 ranged from 24 percent to 29 percent, but primary forest that was designated as non-institutionally recognized forests (APL) experienced a 96 percent loss in forest cover (Margono et al., 2012).

This indicates that much of Indonesia's remaining forests are in a vulnerable position -- as of 2013 figures from the MoF indicate that approximately 8.17 million hectares, or approximately 8 percent, of Indonesia's forest cover are designated as

“APL”– or in other words, non-institutionally recognized forest (Indonesia Ministry of Forestry, 2014b). Also problematic is the fact that as a result of some of the recent forest related initiatives -- there have been reports from our fieldwork and other cases in the literature of official forest being converted to non-official forest (APL) (Barr et al., 2006; Indrarto et al., 2012), and which has likely contributed to the increase in the deforestation rate since the introduction of REDD+ in Indonesia.

The existence of non-institutionally recognized forest also complicates transparency, accountability, and reporting of figures for forest cover loss. These differences between legal designation and actual land cover is one of the reasons that MoF data on deforestation rates in Indonesia have differed from those reported by other sources; in 2013 the MoF reported approximately 124 million ha of official forest (Indonesia Ministry of Forestry, 2014b) but satellite data showed approximately 92.4 million ha of forest cover (Margono et al. 2014). Examples of conflicting data for forest cover and forest cover loss have also been seen among international reporting agencies (Indrarto et al. 2012) but also within the GoI data, among Indonesian governance institutions. For example in 2012, the Ministry of Environment (MoE) identified 59.8 million ha of forest cover in Papua and the MoF identified 44.2 million ha (Samadhi, 2013). Other significant reasons for the discrepancies between calculations for forest cover can include the use of different satellite data and also varying definitions of what constitutes a “forest” (Margono et al., 2014).

Definitions of forest can vary greatly, in their 2010 forestry statistics publication the Indonesian MoF defines official forest as, “a specific territory determined and or

decided by the government as a permanent forest.”(Purnomo 2012, p 76). The FAO defines *forest* as, “Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use.”(FAO, 2006). The FAO defines *primary forest* as, “Naturally regenerated forest of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.” ((UN FAO) Food and Agriculture Organization of the United Nations, 2015). Despite discrepancies that may arise from varying definitions and legal forest designation, an analysis of primary forest defined by Margono et al. as “mature natural forests of 5 ha or more in extent that retain their natural composition and structure, and have not been completely cleared and re-planted in recent history, including both intact and degraded types” demonstrated that the rate of deforestation and forest degradation in Indonesia from 2000 to 2012 was increasing, with 2012 demonstrating the highest rate of forest cover loss (Margono et al. 2014, p1).

2.4.2 Forest Management Units

Further complicating the forest classification system in Indonesia, the 1999 forestry law (Law No. 41/1999) states that all forest areas must be broken down into Forest Management Units (FMU), however, up until now this has not been completed. The National Medium-Term Development Plan (RPJMN) and the Strategic Plan of the Ministry of Forestry for 2010-2014 again revitalized the idea of FMUs by stating that FMUs must be designated for all official forest in Indonesia. These FMUs in Indonesia would be considered a separate legal designation from that of the official forest, but would overlap with official forest and sub-categories (such as production forest (HP),

convertible production forest (HPK), protection forest (HL), etc.) (Djajono & Siswanty 2011). The intended purpose behind creating these FMUs is to increase the connection between National- and district-level forest governance, increase public access to forest resources and resolve conflict (Djajono & Siswanty 2011). They are described as, “...decentralized structures for forest management and planning at the site level, adapted to local conditions but linked into the National enforcing forest regulations such as forest fire control and other illegal practices, and negotiating with local communities on issues such as land use rights and forest access” (Government of Indonesia 2012). These FMUs are intended as a means to extend national level control to the forest directly -- previously these areas were supposed to be managed by the MoF in Jakarta, but until recently there has been a lack of FMU designation. In cases where FMUs were established, authority over them often remained with district governments, which can be problematic because district interests may conflict with national interests. And furthermore, in many cases the district governments have been unable to enforce current regulations (Yuliani et al., 2010). With the renewed plan for FMUs the MoF is in effect sending representatives to manage these areas locally, in collaboration with the district agencies, but still under the auspices of MoF oversight. While this has the potential to improve forest governance it could also allow for further challenges.

Until recently the MoF has legally had control over all institutionally recognized forest as long as it was designated official forest and regardless of whether or not it had been designated as an FMU. But in February of 2012 a court ruling, MK45, altered the original definition of official forest, so that it now states that official forest must also be gazetted into FMUs by the MoF to technically be considered official forest *and*

ultimately under the authority of the MoF. From 2009 to 2013 there has been progress in designation of FMUs, but the task is still far from complete (Indonesia Ministry of Forestry 2014b). As of 2012, only 14.2 million hectares, approximately 10.9 percent of Indonesia's official forest, have been formally gazetted into FMUs. This means that of the 130.7 million hectares of official forest in Indonesia that was not previously gazetted, a total of 116.5 million hectares, approximately 89.1 percent, are potentially no longer under the authority of the MoF (Philip Wells et al., 2012).

The MK45 court ruling has the potential to weaken the authority of the MoF and further complicate successful forest management in Indonesia, although it may or may not affect these dynamics in reality. More recent regulations, such as UU/23/2014, which is discussed further in section 3.1, add to these complications by reallocating authority back to the central government. So, while FMU designation has the potential to improve forest governance by decreasing the disconnect between different scales of governance, it could also allow for further challenges – for example, in certain areas the gazettement of an FMU has caused the borders of the National Park to be reduced, increasing the vulnerability of the area no longer included in the national park to conversion (Yuliani et al., 2010). Regardless, such ambiguities and complexities contribute to an already challenging forest governance situation. Even if FMUs are established, many of these areas must also be assessed for tenure; specifically who has possession of current licenses for land use.

2.4.3 Forest classification and Tenure

Tenure problems plague forest management and land use in Indonesia. In our fieldwork multiple instances of overlapping tenure were observed – involving palm oil

licenses on community forest, smallholder palm oil encroachment onto REDD+ projects, and artisanal mining in National Parks. Much of Indonesia's official forest has contested tenure -- licenses are often issued that contradict the official forest use categories (Indrarto et al., 2012). Problems with tenure play into the aspects of governance discussed here and will be included throughout the discussion as relevant, though tenure issues in Indonesia are comprehensively discussed in many other articles -- (Contreras-Hermosilla et al., 2005; Larson et al., 2013; USAID, 2010). One of the main tenure challenges relevant to this discussion are discrepancies for who has authority over land among different levels of governance – from the National, to the Province, to the District -- and as a result, licenses are sometimes issued that contradict the MoF official forest use designation (Barr et al., 2006). Overlapping tenure and licensing can also be found among forest communities, government, and private interests –seen in instances of existing unactivated palm oil and mining concession licenses that overlap with community forests and conservation areas. This kind of overlapping tenure can occur among various interests: between communities and the government; between communities and private companies; between companies and the government; among state institutions; among companies; among communities; and any combination of these as well (Steni & Hadad, 2012). These tenure conflicts in Indonesia were observed in our fieldwork, are well documented in the literature and occur for different reasons such as corruption and exceptions made to forest protection laws but especially because of the overlap overlapping authority among various scales of forest governance (Barr et al., 2010; Eilenberg, 2012; Smith et al., 2003). There are many documented cases in which licenses have been issued which contradict the official MoF forest use designation. In

some instances these licenses exist in protection or conservation forest – for example, as of 2011 there were at least 13 mining companies operating in protection forest covering 850,000 hectares (Indrarto et al., 2012).

Overlapping tenure is particularly problematic when taking into consideration community forest rights in Indonesia. Such rights in Indonesia are institutionally challenged with less than 1 percent of Indonesia's forest governmentally recognized as community forest (Stevens et al., 2014). In many areas of the country, forest communities have been living on and using official forest for generations, but that land is generally considered to be owned by the state and in many cases, already licensed out to private interests such as palm oil, timber, or mining companies. For example, approximately 59 percent of community forest in West Kalimantan is covered by palm oil concessions not yet activated (Stevens et al., 2014). Examples of this from our fieldwork included maps demonstrating palm oil concessions existing on top of *hutan adat* (community forest) that had been known to belong to the community for generations.

A court ruling, ‘Indonesian Constitutional Court decision no.35/PIU/2012’ (known as MK35) was meant to reform complications with this aspect of forest tenure, stating that *hutan adat* is no longer state land, or in other words is not under the authority of the MoF and separate from official forest (UNORCID 2013). While MK35 is a step in towards securing community forest tenure, there are still complications to actually establishing indigenous tenure in many cases and it is possible that it will take many years to accomplish such an effort. Yet to date there are very few areas that have been legally recognized as *hutan adat* (Stevens et al., 2014), and many stakeholders, including

government authorities, have acknowledged that the pathway to do so will likely be time consuming and difficult. In order for such a designation to be made, the government must first recognize local communities as an “indigenous” group, and then their right to the forest must also be established. Considering the already complicated land tenure system, the overlap between national and district authorities regarding forested lands, and the high economic value of forest area this will be difficult to establish in many cases.

2.5. Weak governance

Although some reforms have been made in recent years, weak forest governance is ubiquitous in Indonesia manifesting as confusing regulations, weak institutional capacity, corruption, overlapping authority, and insufficient sanctions for violations. These issues originate from a history of problematic governance since the period of Dutch colonization, the Suharto Regime, and the subsequent decentralized governance system (Suwarno et al. 2015) as discussed above. Because of these challenges forest loss in Indonesia is occurring not just in designated production forests, but also in areas that are institutionally recognized, and protected (Margono et al., 2014). Between 2000 and 2012, 40 percent of all primary forest loss in Indonesia occurred within areas that prohibit clearing (Margono et al., 2014) and a low estimate by the MoF from 2007 quantified approximately 200,000 hectares of encroachment per year happening in conservation areas (Murdiyarso, Dewi, Lawrence, & Seymour, 2011). In 2013, MoF statistics report that approximately 13 percent of deforestation was in conservation and protection forest (KSA/KPA & HL) (Indonesia Ministry of Forestry, 2014b).

2.5.1 Overlapping authority

Laws are confusing and make identification of violations difficult because the wording of laws and regulations sometimes conflict among each other, and potentially within themselves (Indrarto et al., 2012). Even when there is a clear case of a violation often there are no sanctions in place to punish violators and furthermore authorities often lack the capacity to enforce what sanctions do exist (Faure & Wibisana, 2013). Confusing regulations can also exacerbate weak governance when there is ambiguity concerning the authority of national and regional governance, and which further leads to conflicts between national goals for forest management and land use and what is happening in reality (Barr et al., 2006). District governments in the Indonesian system wield a fair amount of authority over decisions for land use in their districts, and sometimes their actions may conflict with or override the stated intentions of the National government. This is exemplified when the National government may designate a forest area as protected, but later regional authorities can, and do, issue licenses for operating within those areas and then leads to clearing or degradation in protected areas (Contreras-Hermosilla et al., 2005). There have been examples of this happening from both our fieldwork and in the literature (Barr et al., 2006).

While there have been steps taken towards reforming some of these complicated governance dynamics, change happens slowly and is not immediately seen on the ground. One example of this is in 2014, “Law Number 23 about Local Government”, UU/23/2014, was passed and was meant to reallocate authority over land use from district governments to provincial and ultimately the central government. If implemented, this law has the potential to have major impacts on forest governance – for one, in most cases

permits that conflict with the central government's intentions could no longer be issued by the district. Additionally, it could strengthen the authority of the central government as there will be far fewer provincial governments to control (around 34) while there are over 500 district governments. However, the law has yet to take effect on the ground, and to date district governments have retained authority over forest land use.

Furthermore, corruption in the forestry sector can be connected to the overlap in authority at different scales of governance. Protected areas may be designated at the national level, but enforcement of protected areas falls to local authorities. These authorities may expect to receive incentives in order to stop encroachment and may be used to receiving bribes from other land use interests. Historically, and today, it is not uncommon for companies or individuals wanting to operate within a particular area to give a payment as a bribe or tribute to local authorities (Transparency International, 2011; Wadley & Eilenberg, 2005), and while this may still be customary it is no longer considered legal. As a result, successful enforcement of forest area boundaries is problematic even when an area is designated as a conservation area (HL/KSA/KPA), REDD+ activity, or National Park. In the case of national parks or activities such as REDD+ projects, when there is not likely to be anyone willing or able to make such payment those areas are left vulnerable to encroachment.

Conservation areas and REDD+ projects face encroachment from both small and large scale palm oil, logging, and mining, to which authorities, without sufficient incentives and/or capacity to enforce, turn a blind eye. Examples of this kind of encroachment sometimes occurs when agricultural land used by a palm oil company

borders a protected area (WWF 2013; Yuliani et al., 2010) and has also been reported by those running REDD+ activities. Throughout our fieldwork there were a number of observed and reported incidents of encroachment occurring on protected areas and on REDD+ projects, with virtually no action from local authorities. Encroachment can be small in scale to begin with, perpetuated by corporations, individuals or small groups, but when not halted by authorities, paid to look the other way, it can spread to cover thousands of hectares, as has happened in a number of National Parks and REDD+ projects already (Hoffman, 2014; WWF 2013; Yuliani et al., 2010).

2.5.2 Corruption

It is widely acknowledged that corruption is a problem in Indonesia, particularly in relation to the forestry sector (Dermawan et al., 2011) and which is further compounded by confusing regulations and the legacy of complicated land tenure issues from the Suharto regime (Neef et al., 2007). The pervasiveness of corruption in Indonesia can be seen when looking at the mining sector, one of the main contributors to deforestation – only 40 percent of over 10,000 registered mining companies were found to have clean and clear business permits (Cahyat, 2014). Revenues associated with forest resources and official forest use related projects has made it a particularly attractive sector for corruption -- it is estimated that between 2007 and 2011, seven billion USD were lost to corruption within the forestry sector and illegal logging activities in Indonesia (Human Rights Watch (HRW), 2013).

There are different types of corruption happening at different levels of forest governance, and all of these manifestations of corruption contribute to deforestation in

institutionally protected areas (Smith et al., 2003). And because corruption in Indonesia reaches into the top levels of regional and central government, and across ministries, its eradication is difficult. Transparency and accountability are key to preventing corruption, but have not been integral parts of Indonesian forest governance (Dermawan et al., 2011). While the introduction of REDD+ has brought about opportunities for governance reform and increased accountability, it has done the same for increased corruption. The Government of Indonesia has acknowledged the risk of increased corruption activities related to REDD+ and some steps have been taken towards reform over the past decade. These include the work of a corruption eradication agency, which has brought a number of anti-corruption cases to court in recent years. The Corruption Eradication Commission (Komisi Pemberantasan Korupsi; KPK) was founded in 2002 and also has a special governmental unit dedicated exclusively to natural resource management and governance.

According to an assessment done by the KPK, the MoF was found to be the lowest ranked government ministry in Indonesia on an integrity survey and furthermore responsible for inaccurately mapping forest cover, land use, concessions and unfairly allocating land rights (Human Rights Watch (HRW), 2013). The KPK has had a number of successes, many related to forest governance reform, and for some time has been considered to be an effective and well respected agency (Schuette, 2012; Stevens et al., 2014). The KPK has also been described as weak for not prosecuting high ranking individuals, and when it has brought charges against such individuals, members of the KPK faced serious pushback in the form of allegations from other agencies (Vernaz, 2015). Such controversy, could be attributed to problems within the KPK or outside

forces at odds with the goals of the KPK (Butt, 2011; Dermawan et al., 2011). A revision to the original KPK law was proposed in 2016, which would significantly cut back on the power that the KPK has in investigating corruption. However, while the revision was being discussed, public protests caused the revision to be shelved (Amindoni, 2016).

2.5.2 Lack of Sanctions

Further characterizing weak governance in Indonesia's forestry sector is the issue of a lack of sanctions for violators. The legal sanctions for violations of forest regulations are non-existent or too weak to support enforcement (Contreras-Hermosilla et al., 2005; Faure & Wibisana, 2013; Indrarto et al., 2012). For example, even in some instances when there are clear and identified violations by license holders, licenses have been initially retracted but then later reissued (Indrarto et al., 2012). Adding to the fact that sanctions are scarce, they are also difficult to impose -- there is often ambiguity about who may enforce them. This is evidenced by the fact that the Minister of Forestry is responsible for official forest land but does not have the authority to impose sanctions if there are permits issued on the official forest by another sector (Indrarto et al., 2012). Extensive encroachment, as described above happens because of corruption, but also weak institutional capacity resulting in part from a lack of sanctions. Another example of the need for stronger sanctions can be seen in the case of the Presidential Moratorium on new licenses on primary forest. As recently as 2011, there were no sanctions developed in accordance with the Moratorium on new licenses in primary forest and within the first three months after the moratorium was issued, over 100 incidents of deforestation were recorded in non-concessioned moratorium areas (Austin, Sheppard, & Stolle, 2012).

2.6 The Moratorium

The Presidential Moratorium on new concessions for primary forest was announced as a follow up to Indonesia's public commitment to REDD+ and Letter of Intent with Norway. Although welcomed by some stakeholders as significant progress in the effort to reduce deforestation rates in Indonesia, many other stakeholder groups were concerned that aspects of the moratorium and its execution could be problematic (ICSCFPGC 2012; Murdiyarso et al., 2011) particularly the fact that it fails to offer new protection to areas not already protected before its creation. While in some ways the moratorium represents the effort and willingness that the GoI has demonstrated in recent years to curb emissions and reform forest governance, it also reflects the complications that characterize the situation in Indonesia. Moreover, the moratorium itself may have been at least partial motivation for the conversion of official forest land to non-institutionally recognized forest.

As discussed in section 2.0, *Forest Classification and Defining Forests* above, non-institutionally recognized forest is more vulnerable to conversion than institutionally recognized forests. And after the Moratorium was announced, there have been a number of instances of official forest being converted to non-institutionally recognized forest (APL). Examples of this can be found at both the national and subnational levels. In one instance, 11 days after the moratorium started, a Ministerial Decree ordered 1.2 million hectares of official forest in the REDD+ pilot province of Central Kalimantan to be converted to non-institutionally recognized forest (APL) (Murdiyarso et al. 2011). Another example identified through interviews and fieldwork is in Kapuas Hulu, officially designated as a "conservation district" with two large national parks, *Taman*

Nasional Betung Kerihun and *Taman Nasional Danau Santarum*. In 2013, approximately 5 percent of official forest, institutionally recognized forest estate, in Kapuas Hulu was converted to non-institutionally recognized official forest, or land for other use (APL).

There have been other criticisms regarding the moratorium -- one component of this is that when all things are considered the moratorium does not afford protection to as much area as it originally seemed to protect, when taking into account the exceptions to the moratorium and already previously protected forest concessions, only ~26 percent, or 11.3 million hectares of the 66.4 million hectares of forest cover included the moratorium map are actually given protection by the moratorium (Austin et al. 2012; Murdiyarso et al. 2011). Ultimately at least 29 percent of the country's peatlands and 21 percent of Indonesia's remaining primary forests are not included in the associated moratorium map and all of this primary forest is designated as either production, limited production, or convertible forests (Murdiyarso et al., 2011). Looking at the entire area covered by the moratorium, 63.8 percent (42.4 million ha) had already been designated as conservation or protection forest area, and another 19 percent (12.7mha) of which is otherwise geographically or legally protected (Austin et al., 2012).

Other concerns include confusion over terminology used in the presidential instructions, exclusion of some areas of primary forest & peatland, and the practicalities of enforcement. The exclusions refer to the fact that the presidential instructions contained a number of exceptions to the area to be included in the moratorium. One exception is regarding licenses that have “received approval in principle from [the] Minister of Forestry”, regardless of whether or not they exist on primary forest or

peatland (INPRES 6/2013, p. 2). This has important implications for the scope of the moratorium, as can be seen from differences between the first release of the moratorium map (not excluding these areas) and the second release of the map (which excludes these areas). In the first version of the map, these licenses were not excluded but in the November 2011 updated version, they were removed and resulted in net change of approximately 3.6 million hectares of primary forest and peatland being excluded from the moratorium area, or 7.6 percent of the original area from the moratorium (Austin et al., 2012; Wells, Franklin, & Paoli, 2011). And, over 4 million hectares, or 25 percent of the moratorium area initially afforded new protection, was later excluded from the moratorium primarily because of pre-existing palm oil concessions (Wells & Paoli, 2011).

The second and third exceptions have also proven problematic in their ability to protect primary forest cover. The second exception is for, “implementation of national development that is vital, namely: geothermal, oil and gas, electricity, land for rice and sugar cane;” (INPRES 6/2013, p. 2). The mention of electricity in this exception could include coal mining, one of the major drivers of deforestation in Indonesia (Indrarto et al. 2012), responsible for a low estimate of approximately 10 percent of deforestation in Indonesia as of 2005 (Contreras-Hermosilla et al., 2005). After the release of the presidential instructions (INPRES 10/2011), a ministerial decree with specific details for implementation was issued to a number of national level ministries, agencies, and subnational government officials. The ministries and agencies to which this was released notably excluded the Ministry of Agriculture and Ministry of Energy and Mineral Resources, despite their authority over deforestation activities such as palm oil and

mining (INPRES 10/2011; INPRES 06/2013; Murdiyarso et al. 2011). The third exception pertains to rights of businesses currently holding licenses to maintain those licenses, regardless of whether they are on high conservation value (HCV) forest at the moment or not. This exception states, “Extension of existing permits for forest exploitation and/or forestry area utilization as long as the business license remains valid.” (INPRES 6/2013,p 2).

The fourth exception has more positive implications as it allows for the granting of Ecosystem Restoration Concessions (ERC). ERCs are essential to REDD+ implementation in Indonesia, as it allows REDD+ projects to be implemented in production official forest (HP) in Indonesia. This means that forest that is otherwise designated as available for logging, mining, or agricultural concessions can instead potentially be turned into REDD+ projects.

The wording and content of the moratorium itself has also been controversial and in some instances confusing. For example there is conflict between the text of the moratorium and two earlier editions of the moratorium map (Wells & Paoli, 2011). Furthermore, while the moratorium's rather broad definition of peatland can be seen to have an advantage, in that it is broad enough that it includes all areas of peatland greater than 50cm in depth that have not already been concessioned (Wells & Paoli, 2011) this is not the case with the way that forest is defined. While the definition of peatland is broad and inclusive, in contrast the loose terms used to define forest left much of the moratorium open to problematic interpretation.

Controversial is the use of the term “primary forest” as the terminology in the Letter of Intent with Norway was for “natural forest”, but that used in the moratorium is “primary natural forest and peatland”. As discussed above, definitions of forest vary, but when terms are not explicitly defined in official policy documents it can be problematic for enforcement. In the case of the moratorium, it was the first time that the term “primary natural forest” has been used in Indonesian forest policy. At the time of this publication there was still no agreed upon definition in Indonesian policy for 'primary natural forest', those that exist conflict with one another (Murdiyarso et al., 2011). Another problem with the term primary forest is that it could potentially exclude approximately half of Indonesia's forest cover, as it has also been reported by the MoF that primary forest is considered to be forest area that has not been logged (Wells & Paoli, 2011). Much of Indonesia's official forest is considered secondary forest, or disturbed forests, areas that are often still rich in biodiversity and carbon stock despite activities such as logging (Murdiyarso et al. 2011; Wells & Paoli 2011). Without clear definitions documents such as the moratorium remain open to interpretation and can lack the effectiveness to support the intentions behind the document.

Regardless of issues with the moratorium's exceptions, wording, and how forest area was afforded protection by it, the intent behind it was to make it more difficult for companies to obtain licenses for agricultural purposes or mining on area with forest cover. As such, it may have contributed to the increase in deforestation rate by motivating certain parties to convert institutionally recognized official forest into non-institutionally recognized forest (APL), as demonstrated by the examples discussed in the results and discussion section of a number of documented cases of institutionally

recognized forest being converted into non-institutionally recognized forest, which occurred after the moratorium was announced (Murdiyarso et al. 2011). These converted areas are more vulnerable to conversion as it is easier to obtain licenses in them for non-forest purposes.

2.7 Conclusions: Prospects for the future

This article investigates the realities of forest management and some of the reasons behind the increasing rate of deforestation in Indonesia since the introduction of REDD+. Forest policy and governance in Indonesia is complex and resistant to change. Changes in forest policy often happen at the national level and are not always immediately or effectively adopted at the local level as a result of the decentralized governance system in Indonesia. This has led in the years following REDD+'s introduction, to forest management being conducted in a business as usual mode despite some policy changes. Other reasons behind the increase in the deforestation rate include potential leakage¹ resulting from institutionally recognized forest being converted to non-institutionally recognized forest (Ekadinata et al. 2010), complex forest tenure (Resosudarmo et al., 2014), and weak & complicated forest governance. While recent efforts, such as the moratorium, have been made by the GoI to strengthen forest governance the increasing rate of deforestation reflects the difficulty in making significant change. Initial reports from Global Forest Watch indicate that the rate of deforestation in Indonesia has continued to increase into 2013 and 2014, and it is likely that with the recent devastating forest fires of 2015 this number will again be higher than in previous years.

¹ Leakage is defined as protecting forests in one area causing deforestation in another area (United Nations Framework Convention on Climate Change (UNFCCC), 2010)

Despite this, the discourse about improving forest governance has increased and along with it new regulations that have the potential to improve forest governance and signal there may be hope for Indonesia's forests and the stakeholders that depend on them. While the majority of stakeholders interviewed indicated some level of fatigue and doubt regarding REDD+, ultimately REDD+ may offer the greatest benefit in its role as a catalyst towards change. REDD+ seems to have initially increased the amount of attention paid to forestry issues in Indonesia (Cronin & Santoso, 2010). It is also important to recognize that the Indonesian government has made strides in recent years, and is continuing to demonstrate commitment to this issue (Parlina, 2015).

Based on our assessment of forest governance efforts in the wake of the introduction of REDD+ the main areas for governance reform to be targeted for future endeavors should include strengthening governance and increased clarity of regulations and policies. This could be done by increasing sanctions and clarifying who has the authority to issue them as well as continuing to untangle tenure issues through efforts such as the One Map.

Governance reform can be a long and unwieldy process, but by focusing on areas identified as problematic there may be hope for future efforts. For instance, some research indicates that inclusive decision making and increased monitoring & transparency could lead to improvements in decentralized governments (Suwarno et al., 2015). Indonesia has also increased focus on a national monitoring system using remote sensing (Roswintarti et al. 2013), which has the potential to help improve accountability and is essential for successful REDD+ efforts (de Sassi et al., 2015).

Chapter 3: Challenges for successful outcomes at REDD+ project sites in Indonesia

3.1 Introduction

The United Nation's (UN) *Reducing Emissions from Deforestation and forest Degradation (REDD)* program has been introduced in over 29 countries around the world, with financial and logistical support from many other international actors and institutions. It was developed initially as a way to reduce carbon emissions by providing financial support to developing nations for carbon sequestration resulting from reduced deforestation and forest degradation, and later evolved to include co-benefits to carbon sequestration, such as biodiversity and strengthening indigenous community rights (REDD+). How exactly this support will be distributed and how projects materialize has been determined based on each country's governance and forest scenario (Holloway and Giandomenico 2009). Skepticism and doubts about REDD+ have developed due to the numerous challenges that have arisen with the implementation of such an complex and involved undertaking (Edwards, Koh, and Laurance 2012; Mabele and Scheba 2016). Despite these doubts international efforts towards, and financial support for REDD+, continue (Parlina 2015; Johannsdottir and McInerney 2016). Many different studies have looked at how REDD+ is being implemented on the ground (Bolin and Tassa 2012; Burgess et al. 2010; Sills et al. 2014; Sunderlin, Ekaputri, et al. 2014; Peskett, Schreckenberg, and Brown 2011; Naughton-Treves and Day 2012) in an attempt to pinpoint areas for improvement and pathways forward. While there is an extensive body of literature on REDD+ in Indonesia (Dixon and Challies 2015; Agung et al. 2014; Santosa, Khatarina, and Suwana 2013) and elsewhere (Naughton-Treves and Day 2012; Sills et al. 2014; Sunderlin, Ekaputri, et al. 2014), there is still more to learn as REDD+

projects continue to develop in many places. Field research on the development of REDD+ projects has the potential to clarify existing challenges and inform future activities.

This article contributes to the REDD+ and forest governance literature by identifying and describing the major components that can be used to assess REDD+ projects in Indonesia in their efforts towards achieving desired outcomes of reduced emissions from forest degradation and deforestation and biodiversity preservation. These components were chosen through review of the relevant literature and policy as well as the results of fieldwork in Indonesia with REDD+ stakeholders. The challenges associated with these factors, and the potential they have to affect outcomes of carbon sequestration and biodiversity preservation will be assessed using examples from our research on three case studies of existing REDD+ demonstration projects in Indonesia.

The insight on REDD+ provided by this research is needed globally, but also specifically for Indonesia – a country with the third largest tropical forest in the world, one of the highest global deforestation rates (Hansen et al. 2013), and a complicated forest governance approach (Galudra et al. 2011; Indrarto et al. 2012). While these characteristics have made implementation of REDD+ there challenging, Indonesia's Government has expressed enthusiasm for and engaged in REDD+ since 2008. Since that time over 40 REDD+ projects have been identified on the ground. In Indonesia, there is no single template for how a REDD+ project can or should be organized. The National framework on REDD+ provides an outline that offers many different ways for a REDD+ project to be designed and so there is a great deal of variation among projects, who is running them, who is funding them, and how they operate. Despite the diversity

among projects there are some essential common factors among all projects that are essential to achieving REDD+ outcomes, such as those described in this article. By assessing these common factors at different project sites there is a potential for identifying some of the major challenges to implementation and opportunities for the future. Using three case studies from different provinces in Indonesia, we are able to illustrate how challenges to REDD+ success can play out across a diverse landscape of locations and contexts.

3.2.1 Methods and case study sites

Data collection was undertaken from 2012 to 2014 in the form of participant observation, interviews, and a review of relevant forest policy. The ethnographic research was supplemented by a range of other sources including newspaper and other media reports, research publications, grey literature, and policy documents in order to understand the context of REDD+ stakeholder experiences and potential disconnects between the literature and what was happening on the ground. Reliable information concerning the realities of REDD+ and forestry in Indonesia can be difficult to obtain and differences between public pronouncements and official documents and the reality on the ground is often stark. Thus, triangulating the data in this way –spanning the full spectrum of forest policy from international to local scales – and combining multiple sources with interviews among stakeholder groups, provides insight into how international and national initiatives manifest themselves on the ground, increases the validity of the data (Decrop 1999) and helps to bridge the gap between literature, policy and reality.

This fieldwork took place at varying scales– international, national, local. The majority of data used for this paper was taken at the local level at project sites. Participant

observation involves site visits, or spending time at fieldwork sites and with informants to collect data through the observation of activity and phenomena related to the topic of research (Bernard 2006). For the purposes of this study participant observation included time spent at each project site with project organizers, forest communities, and by attending relevant meetings at local sites and in national level policy contexts. In addition to general site visits, participant observation was carried out at meetings between villagers and project organizers; among project organizers; among villagers; and by visits to the project sites. Nine meetings were attended which were specifically related to one of the case study sites, and nine other meetings that were relevant to more general REDD+ issues were also attended. At these meetings extensive notes were taken, and they were sometimes recorded and transcribed. Notes and transcriptions from meetings were used in the development of themes for coding, but not included in the coding process itself.

Interviewees were all stakeholders of REDD+. For the purposes of this research stakeholders are defined as someone who is currently, or has previously been, somehow involved directly in the REDD+ program. Initial interviewees were selected on the basis of the extent of their involvement in REDD+ activities, and from there a chain referral and preferential sampling method was used (Bernard 2006). Interviews were conducted with 71 stakeholders from a variety of stakeholder groups: donors, project managers, employees and heads of non-governmental organizations (NGOs), government officials & policy makers, members of civil society organizations, academic researchers, and community leaders and members. Of the 71 interviewees, 30 stakeholders were directly involved with one of the case study sites and 41 were general stakeholders involved in REDD+ at the district, provincial, national or international scale of operation. Most

interviews were conducted in English, but when necessary interviews were conducted in Bahasa Indonesia, or with the assistance of a local translator.

Informal semi-structured interviews are conducted with a standardized list of questions that are then followed up with further probing and exploration of important topics as they are introduced by the informant's response (Bernard 2006). Informal semi-structured interviews are beneficial for research, such as this, that includes respondents that demonstrate a wide array of experiences and perspectives (e.g., government officials, project organizers, forest communities, etc.). These types of interviews provide structure among all of the interviews while still allowing for variation when an informant provides key information that can be explored in more depth. The interviews consisted of approximately five to seven standardized questions developed based on relevant literature and preliminary scoping fieldwork, a copy of which can be found in Appendix A. These questions were usually followed by additional questioning to further explore any key topics brought up during the interview. Interviews began with broad questions aimed at getting a general understanding of each respondent's experiences with REDD+, and further probing of challenges, successes, or perceptions of the program.

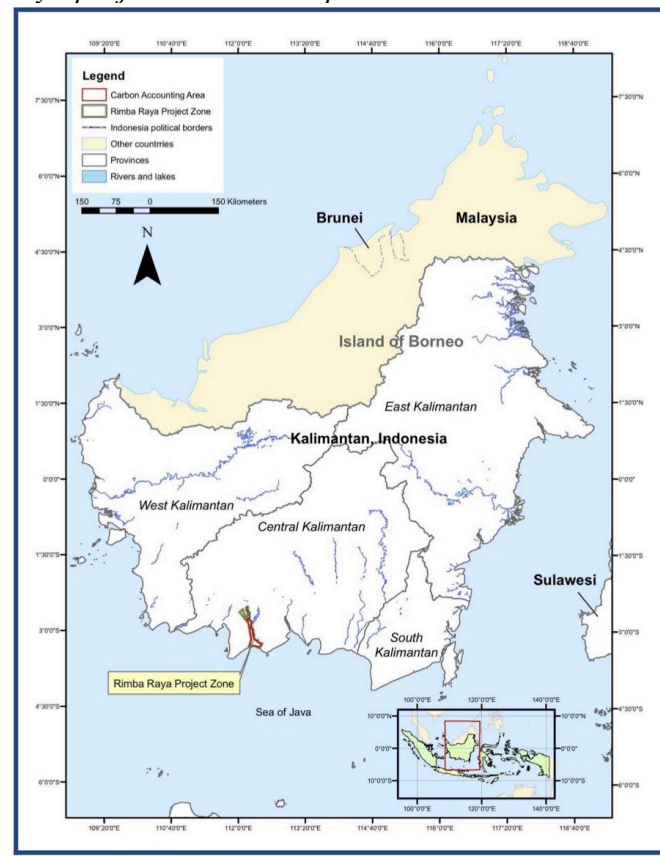
When possible interviews were recorded with permission of the respondent, and in the case of the few exceptions meticulous notes were taken of the interview. Interviews were transcribed and entered into a TAMS Analyzer database in order to apply a grounded theory approach to analyzing the data (Charmaz and Belgrave 2002; Charmaz 2006). Grounded theory and inductive coding methods use a bottom up, rather than top down, approach and involve using data collected for the study in order to form a framework for interpreting and understanding the data (Charmaz 2006). Following an

inductive coding method (Corbin and Strauss 2007) interview and meeting transcripts were reviewed at various stages of data collection in order to develop a list of coding categories based on recurring themes and issues mentioned by respondents. All interview transcripts were coded using these categories. The themes that emerged from the interviews were compared with literature and policy review to identify factors that can provide insight into achieving success in REDD+. These themes were also used to ascertain the major challenges for the projects in our case study in regards to these factors.

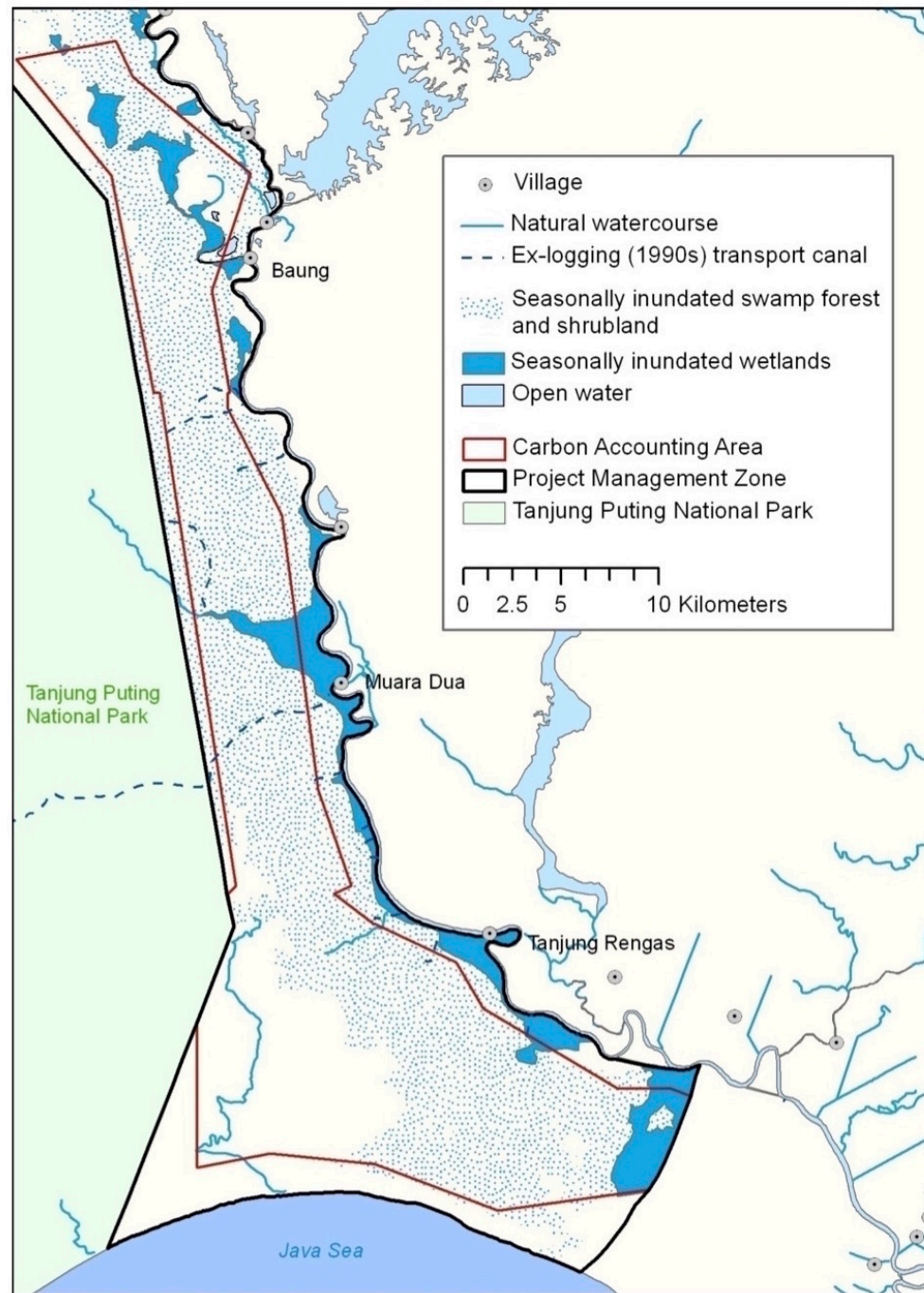
Maps of Case Study Sites

Rimba Raya maps courtesy of (SCS Global Services (SCS) 2013)

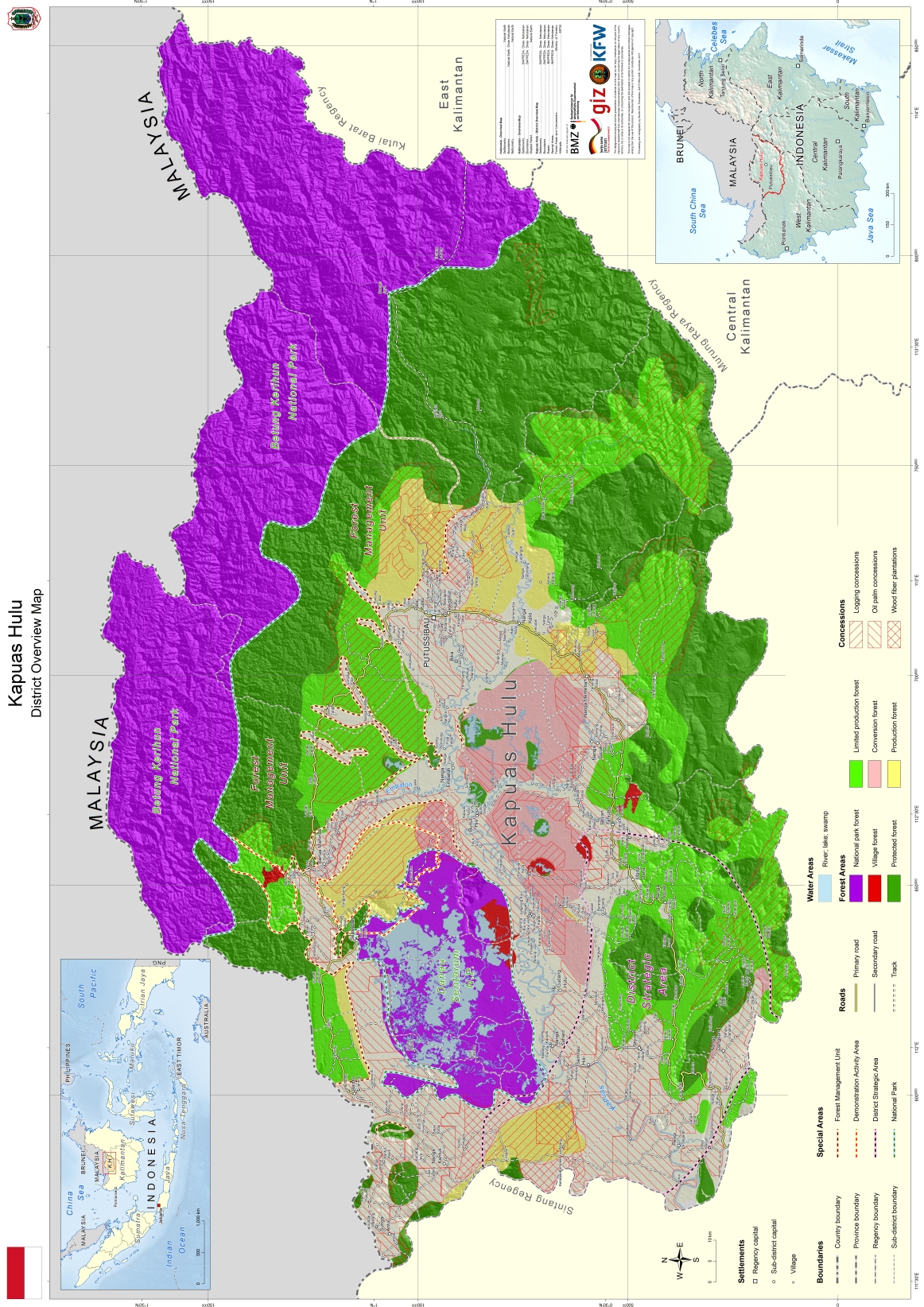
Rimba Raya project location map



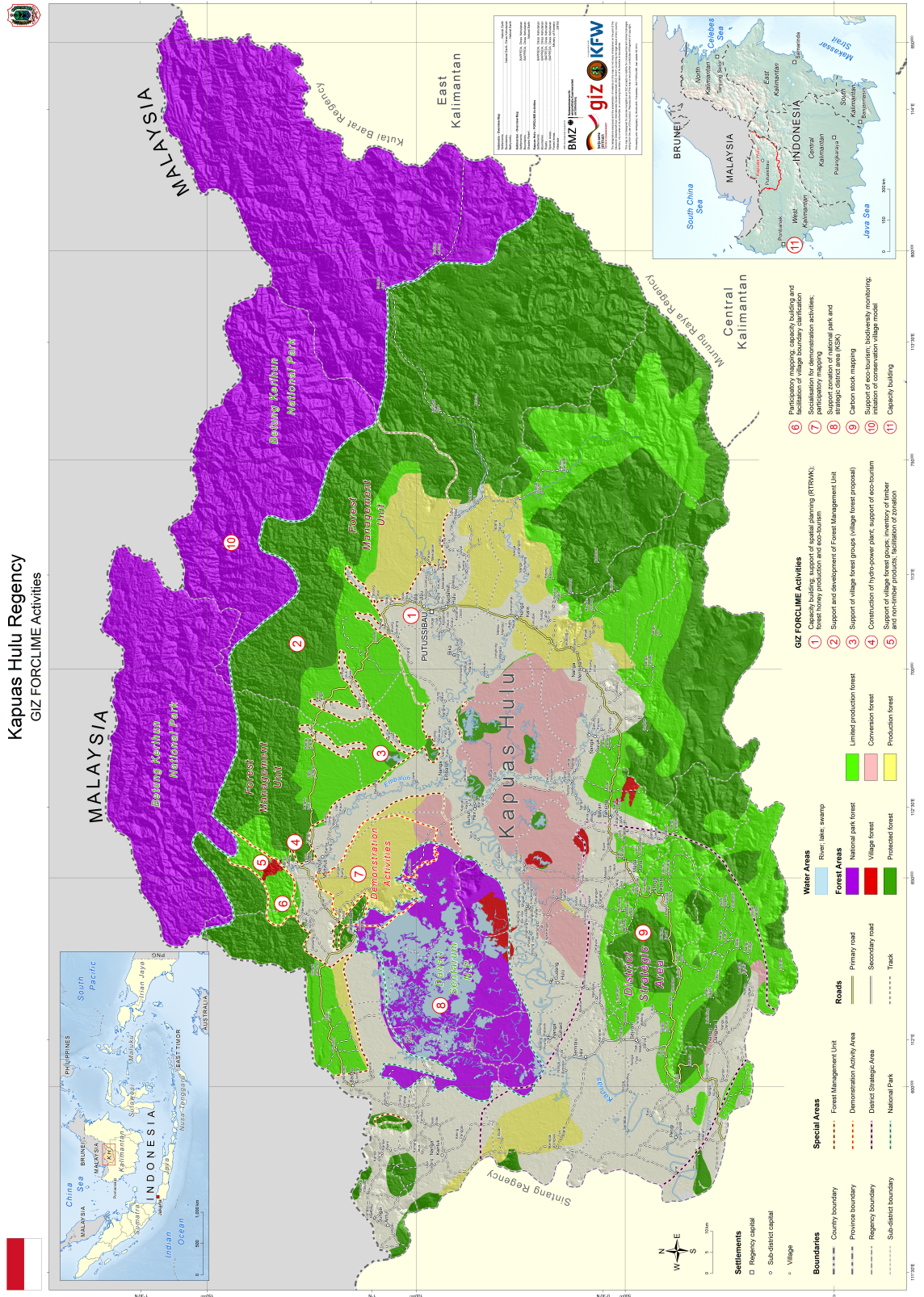
Rimba Raya Concession map

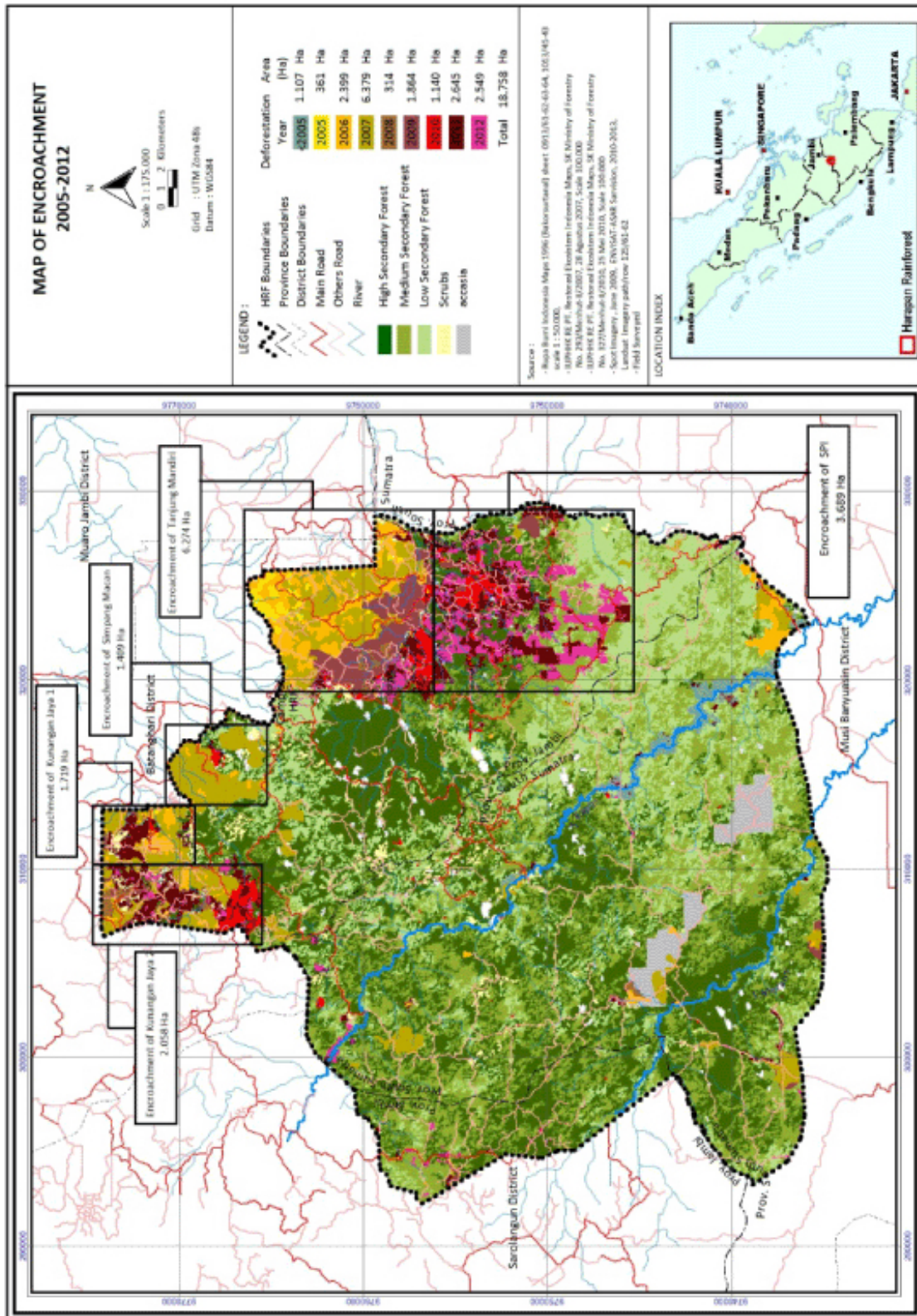


Kapuas Hulu Maps courtesy of Forest and Climate Change Programme (FORCLIME), as part of Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)



Kapuas Hulu Regency GIZ FORCLIME Activities





3.2.2 Case study sites

After initial consultations with REDD+ stakeholders, researchers, and policy makers, the three REDD+ projects discussed here were chosen as suitable case study sites. These three were chosen from the 40 projects that have been started in Indonesia as a representative sample because they demonstrate characteristics representative of other projects throughout Indonesia. The three sites also have differences amongst each other that illustrate different perspectives on challenges and opportunities experienced by other projects throughout Indonesia. Each case study site is funded in a different way, which illustrates how different projects obtain, or fail to obtain, financing. Each of these projects were created with a different intention, which demonstrates some of how projects in Indonesia come to be and structured somewhat differently. They also have commonalities amongst each other and with projects throughout Indonesia that offer a basis for comparison. Each of these sites is fairly prominent and well known in the REDD+ context, and has also been identified at some point as being an “official” REDD+ project in Indonesia. While this is one characteristic that was important for our sample of case studies, the status as an official REDD+ project actually means little more than recognition as such by various stakeholders. These three projects also provide varying perspectives on challenges and opportunities as experienced by REDD+ projects throughout Indonesia. In cases where they were less able to achieve success with the criteria it provides a helpful contrast for identifying opportunities for improvement.

The complexity of Indonesia’s governance system provides a complicated background for forest conservation activities (Galudra et al. 2011; Enrici and Hubacek 2016), and REDD+ has developed there in an equally complex way. REDD+ projects can

be, and have been, started by stakeholders at a variety of scales – international (as in the case with the UN REDD+ pilot program), national, district, and project level. Some of these initiatives were adopted as a way to gain more support for already planned, or underway, conservation activities. Others were undertaken in an effort to start new projects that could theoretically take advantage of the new funding and support that the introduction of REDD+ might offer. As a result, there are some projects and efforts in Indonesia identifying with REDD+, but which may vary in both design and goals from the initial idea of REDD+.

There are multiple ways that a REDD+ project can form –based on existing conservation projects, within national parks, based on community forest areas, or as an Ecosystem Restoration Concession (ERC). ERC licenses are issued specifically for production forests, which are designated for industrial use by the Ministry of Forestry and experience extremely high rates of deforestation (Margono et al. 2014; Margono et al. 2012). Thus these projects have the potential to play a particularly important role in reducing deforestation in Indonesia. REDD+ projects are also needed in the case of already running conservation projects that may need more funding, or in National Parks, which in Indonesia are still quite vulnerable to degradation (Yuliani et al. 2010; Gaveau et al. 2013; Gaveau et al. 2007). Two of the projects included here, Hutan Harapan and Rimba Raya, are ERCs and were designed with the intention of taking advantage of new funding and policy opportunities offered by REDD+. The other project, Kapuas Hulu, is a community based forest conservation initiative that seeks to take advantage of the opportunities for recognition by local and national governments that have been created by REDD+, but not necessarily the funding.

The first case study site, Harapan Rainforest, is located in Jambi, Sumatra and was initiated by three conservation organizations -- Burung Indonesia, BirdLife International, and the Royal Society for the Protection of Birds. These three organizations started a private ecosystem restoration company, PT Restorasi Ekosistem Indonesia (PT REKI), in order to obtain an ERC license since ERC's can only be obtained by a private entity in Indonesia. Harapan was the first ERC license to be issued by the MoF in 2008. Harapan was initiated by these conservation organizations hoping to use REDD+ as a way to achieve conservation goals broadly oriented towards protecting various species of birds and their habitats. The basis for Harapan's ERC license is that they will help restore the ecosystem, which has been severely degraded over the past 50 years (Buerger 2016). Part of the plan for achieving this is to undertake afforestation efforts as well as prevent further use of the area for logging or palm oil. Sumatra has faced significant rates of deforestation over the past 50 years -- with a decrease in natural forest cover from 58 percent in 1985 to 29 percent in 2008 (Uryu et al. 2010). Timber extraction in Sumatra has been a cause of degradation for decades (Kissinger et al. 2012), and oil palm dominates much of the landscape throughout the island (Koh et al. 2011). Jambi was chosen as a focus province for REDD+ implementation by the REDD+ Agency and the United Nations Office for REDD+ Coordination in Indonesia (UNORCID). Both UNORCID and the REDD+ Agency² had planned to open offices in the provincial capital of Jambi City.

However, while Harapan was initially designated and recognized by relevant agencies as a REDD+ project, it has since chosen to disassociate with the REDD+

² Since the time of our fieldwork the REDD+ Agency has been slated to be merged with the new Ministry of Forestry and Environment (Jong 2015)

program. This disassociation came as a result of the negative attention and controversy (REDD Monitor 2014) that PT REKI felt the project received as a result of their association with REDD+, and is evidenced by their lack of mention of REDD+ on their website (PT REKI 2016). Unlike many of Sumatra's lowland forests which have been converted wholesale into palm oil, Harapan was previously a logging concession, and was logged legally until 2007 (Beckert et al. 2014). Having been a site for timber extraction in the 1970s, the 98,000 ha area of tropical forest has, like much of Sumatra, faced degradation over the past 50 years. Yet, Harapan is still widely considered to be a hotspot for biodiversity (Hoffman 2014). As a result, much of the Harapan ecosystem is generally considered salvageable, and the current REDD+ project is directed towards restoration of the area. The indigenous forest communities in the area, the Batin Sembilan, were at some point nomadic but in recent years shrinking territory from increasing palm oil plantations and government resettlement programs have encouraged less movement among the communities (Colchester et al. 2011) and many have had to settle in the Harapan project site.

The second project, Kapuas Hulu, is located in Kalimantan Barat, or West Kalimantan. The Kapuas Hulu project was initiated by an aid organization with the intention of using the logistical advantages created by REDD+, such as recognition by the local government, to undertake a community based conservation project. The REDD+ project here is facilitated by the Forest and Climate Change Programme (FORCLIME), as part of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). The project in this area is not an ERC, but is instead based on a cluster of Dayak villages and their community forests, which has the potential to provide an ecological corridor in

between two National Parks- Danau Sentarum and Betung Kerihun. The exact number of hectares included in the project have not been disclosed publicly.

The project is located in the Indonesian area of Borneo, Kalimantan - the second most heavily forested of Indonesia's seven major islands, and the province of West Kalimantan contains the largest intact forest on the island (Margono et al. 2014). The extent of West Kalimantan is approximately 14 million ha and has 8.8 million hectares of government designated forest area, 5 million ha of which are designated for timber production (Yasmi et al. 2006). Kalimantan has experienced high levels of deforestation (Gaveau et al. 2016) as a result of industrial activity such as the rapid expansion of palm oil plantations (Carlson et al. 2013). Kapuas Hulu, also the name of the district where the project is located, is a heavily forested district in the province of KalBar, it shares a border with Malaysia and is located over 500 kilometers from the capital city of Pontianak.

The third project is located in another of Kalimantan's provinces, Central Kalimantan, the province that experienced the second highest rate of deforestation from 2000 to 2008 (Broich et al. 2011). Rimba Raya, like Harapan, is also an ERC, and so run by a private entity, Infinite Earth, which was founded with the express purpose of creating a business based on conservation of the forest. Rimba Raya, the company's first project, was initiated in order to take advantage of the business opportunities suggested by REDD+. The project area of Rimba Raya, covers ~64,000 hectares and borders Tanjung Puting National Park, providing a buffer zone to the park from nearby palm oil plantations. Tanjung Puting and Rimba Raya are both habitats for the endangered Borneo Orangutan. Central Kalimantan was initially designated as the first pilot province for

REDD+, though several large REDD+ projects there, such as Rimba Raya have struggled to obtain ERC licenses (Walsh et al. 2012). Rimba Raya began petitioning for its ERC permit in 2010, spent several years navigating the bureaucratic process, and was finally granted one in 2013. The majority of the villages involved in the Rimba Raya project are local Dayak ethnic groups.

Two of the case study sites, Harapan and Rimba Raya are ERCs and being run as more traditional payment for ecosystem services projects (Pagiola and Platais 2016). The other, Kapuas Hulu, does not have a unified forest concession and is more focused on forest conservation through community empowerment. All three of the projects have experienced some success and some challenges along the way, though where they have had the most success and the faced the biggest challenges varies with each project. In the following sections the major characteristics of REDD+ projects that are essential for achieving successful outcomes are financial viability, community involvement, enforcement of project boundaries, and independent monitoring. Each of these will be discussed in turn, related to the case study sites and finally compared with outcomes of carbon sequestration and biodiversity preservation. Harapan and Rimba Raya both had to face the challenge of obtaining ERC licenses, which is discussed further below. They have also faced challenges with enforcement of project boundaries and obtaining longer-term financing. Rimba Raya has had the most success in obtaining funding from the carbon market, and can be seen as an example of what is possible for REDD+ projects. The Kapuas Hulu project is not an ERC, and so has not faced the same challenges in terms of licensing or funding but they must deal with the problem of tenure insecurity amongst the villages and forest area included in their project. While Kapuas Hulu has

worked collaboratively with the communities involved in the project, there has been less opportunity for this kind of collaboration at Harapan where the communities have been marginalized for many years before the project began. At Rimba Raya there is some stakeholder fatigue among communities, though there is some level of community involvement. At the time of our research Kapuas Hulu and Harapan were not undergoing independent monitoring of their forest cover, biodiversity levels, or community involvement – something that Rimba Raya had undergone successfully. As a result, Rimba Raya is the only one of the three projects that is able to definitively demonstrate positive outcomes for carbon sequestration and biodiversity preservation. The following sections provide further detail on each input factor and the case study sites.

3.3 Success factors for REDD+ project sites

Table 2: Criteria for REDD+ projects in Indonesia

	<u>Criteria</u>				
Project Name	Finance	Community Involvement	Monitoring	Boundary Enforcement	Carbon & Biodiversi
Harapan	-	-	-	-	+/?
Rimba Raya	+/-	+/-	+	+	+
Kapuas Hulu	+/-	+	-	+/-	+/?
<u>Key</u>	+: achieved some success +/-: some success but still facing some challenges -: yet to achieve success				

These criteria were chosen by using initial evaluation of participant observation and major themes derived from interview transcripts, combined with literature and policy review. Even though REDD+ demonstration activities all more or less aim to achieve some level of carbon sequestration and forest conservation they all also have varying degrees of emphasis on three components – community involvement, carbon sequestration, and biodiversity preservation. Regardless of this variation among projects, there are some common factors identified here as necessary for achieving successful REDD+ outcomes. These include: financial viability, community involvement, monitoring and enforcement of project boundaries, and are discussed here as to how they ultimately can impact the ability of a REDD+ project to successfully achieve carbon sequestration and biodiversity preservation goals. In the following sections each of these topics and how they relate to the projects involved in this case study are discussed in more detail.

3.3.1 Financial viability

Frequently mentioned by respondents in our study, being able to secure long-term funding is something which remains tenuous for many REDD+ projects in Indonesia, and is also a challenge elsewhere (Dixon and Challies 2015; Well and Carrapatoso 2016). Despite the importance of sufficient long-term funding for REDD+ projects, the topic is something that is not always sufficiently addressed in the conservation literature (Phelps et al. 2011) and policy discussions (Vijge et al. 2016). As a result of varying access to carbon markets, and differing initial goals, various projects in Indonesia have different amounts and sources of funding. While many conservation initiatives globally lack

sufficient funding, the issue is important to discuss for REDD+ in Indonesia because of the stark contrast between some initial perceptions of large financing opportunities among some stakeholders and the absence of funding on the ground. The perception of large funding opportunities likely exists because of large sums promised by foreign governments (Government of Norway and Government of Indonesia 2010; Barrett and Goldstein 2016). The mismatch between the initial perception of funding opportunities and the availability of finance may have led some REDD+ projects to develop before the financial component was secured.

Financial viability is an essential, seemingly obvious, component of a REDD+ project, yet many respondents from our research report that the lack of sufficient funding from a REDD+ mechanism or the carbon market has left many projects to the task of searching for funding from other areas. For the purposes of this discussion, we will define financial viability as having, or a reasonable trajectory for obtaining, enough funds to keep the project operational and continue into the future. While the exact amount of time that may define “future” will differ from project to project, many projects in Indonesia must search for long-term funding because of the nature of ERCs in Indonesia. ERCs in Indonesia have terms for at least 60 years, and sometimes for as long as 99 years or longer. The ERC permit obtained by both Rimba Raya and Harapan rainforest is a license for operating a REDD+ type program on production forest (forest marked for private use, logging, palm oil, mining, etc.). This kind of license gives the holders of the license rights to the land for an extended period of time and includes an agreement for a licensing fee paid to the central Indonesian government. As Walsh et al. put it, “Ecosystem restoration is a long-term process that will require sustained funding.

Applications for an ER [license] must include a business plan that outlines how revenue will be generated over the life of the concession [license], which may exceed 100 years.” (Walsh et al. 2012, p36). The amount required for these payments is substantial, and adds onto the costs already associated with running a REDD+ project. Licensing fees, for example, have been reported to range from 0.6million USD (Indriatmoko et al. 2014) to 1.4 million USD (Walsh et al. 2012).

REDD+ is fundamentally a payment for ecosystem service (PES) scheme in which the initial idea was to provide payment for carbon sequestration. Traditional ideas for payment for ecosystem services schemes include buyers and sellers and attempt to internalize the externalized nature from the economy, yet many REDD+ demonstration activities have deviated from this structure (Peskestt et al. 2011). In Indonesia as well, REDD+ “buyers” are not present for many of the sellers, and so many demonstration activities face challenges in securing sufficient funding and often turn to alternative funding options, outside of carbon payments. While carbon markets have begun to gain momentum in recent years (Hamrick et al. 2015) commodification of carbon has still proven problematic because of failures to set global carbon prices (Kalkuhl et al., 2015) and carbon offsets projects do not always have the potential for financial solvency (Gerrit Cornelis van Kooten, Bogle, and de Vries 2015). The result is carbon markets that cannot provide sufficient and accessible funding for many stakeholders attempting to implement REDD+ projects. Furthermore the economics of carbon sequestration may not provide sufficient funding for competition with other potential forest land uses (van Kooten and Johnston, 2016; Butler et al., 2009).

Carbon sequestration as a payment for ecosystem service has proven difficult to

implement, in part because of the complexities associated with carbon finance mechanisms. For one, a growing forest actively sequesters more carbon than a mature one (van Kooten and Johnston 2016). However, biodiversity preservation is also an important aspect of REDD+, and so baselines must be established in order to demonstrate the value of standing forests though in many cases globally they have not yet been established (Virah-Sawmy et al. 2015). Because of this looking exclusively at how much carbon is sequestered for financial compensation could potentially encourage those seeking money from REDD+ initiatives to deforest or degrade an area in order to obtain more funding. Thus, many projects must not just actively demonstrate the increase of carbon stock in an area but moreover need to prevent existing carbon stocks from being released into the atmosphere through deforestation or degradation of that land. This is exactly what is happening in many cases projects are preventing old growth forest from being degraded or cleared by other potential land uses, such as palm oil or mining. In these cases, they are demonstrating additionality, or that the benefits would not have occurred under a business as usual scenario (Melo et al. 2014).

From our case study, Rimba Raya fits under this category, and to some extent so do Kapuas Hulu and Harapan. However, Harapan's forest cover was degraded before the concession became an ERC so there is some potential for further sequestration as the forest is restored. At the time of this research, neither the Kapuas Hulu nor Harapan have done an independent audit to establish baselines, as Rimba Raya has done. A baseline for emissions reduction and forest cover must be established for projects, in order to provide a starting point for assessing total carbon stock in an area and facilitate monitoring of a project's progress in improving or maintaining carbon stock. This information is essential

for certain types of funding, because it can then be used to calculate the total amount of carbon credits that a REDD+ project might have to sell on the carbon market. The lack of a robust carbon market, however, means that projects often do not have opportunities to find funding through this avenue, regardless of established baselines and carbon stock.

There are other entities besides the carbon market that can potentially provide funding for REDD+ projects, though in some cases these too have proven difficult to access. The World Bank's Carbon Fund is active in Indonesia, and has been engaged in developing about a dozen projects around the country but is not currently providing funding to other projects in Indonesia outside of the fund. Although Norway has promised funds for countries involved in REDD+, 1 billion USD in the case of Indonesia, the disbursement of those funds is predicated on demonstrable results, which to date have not yet been actualized (Royal Norwegian Embassy in Jakarta 2016).

As there is no single readily accessible REDD+ funding mechanism in Indonesia, project organizers must turn to other options in order to generate long-term financing. And while evaluating a project based on its involvement in the carbon market may be too strict a measure of success, at the very least a project must have access to, or a plan for finding, sustained funding for the present and future. Many projects were initiated in the hope of securing funding from either the carbon markets, or a REDD+ finance mechanism, but in many cases funding has remained elusive. Finding sufficient and sustained funding has become a challenge for many projects – one particularly striking example can be found with the United Nations' REDD+ Pilot Project in Indonesia, which lists a lack of funding as one of the two main reasons for its eventual demise (UN-REDD Programme 2013).

According to the National framework for REDD+, demonstration projects in Indonesia may be initiated by a variety of stakeholders – communities, NGOs, or private entities. Finance sources will be determined by the pathways for funding available to the project organizers, something that varies greatly for various REDD+ projects in Indonesia. Although all of the projects included in this case study had secured some level of funding, the process of obtaining long-term and sufficient funding was one of the most frequently mentioned challenges by the stakeholders included in our fieldwork from the case studies as well as those involved at varying scales of operation involved in other REDD+ projects.

At the time of this research, the Rimba Raya project was the only REDD+ project in Indonesia having secured funding from the carbon market. Rimba Raya stated that half of their 10 million tons of certified emissions reductions had been sold, but according to project organizers that only ensures funding for the near-term future. The rest of the credits still need to be sold in order to sustain the project over the long-term of the ERC license. While acknowledging the difficulties that a lack of general funding sources have created, project organizers attribute their success to approaching REDD+ as a business. Doing so has meant persevering even when faced with seemingly insurmountable challenges and spending as little as possible on unnecessary costs, and prioritizing what is important and necessary. As one project organizer put it, *“People that are typically involved in REDD have very little business experience. So at this stage of the game...the only people who have succeeded are primarily people who have business experience... if you’re not very results based or very focused on what’s important and able to prioritize, you won’t see what’s important. A business person has to do that*

because of what [running] a business requires...There's no room for error. But I see people here, they get their money from the clouds and they spend it because it's not theirs. And we spend our own money. People that invested in us and trusted in us, so we couldn't lose that money." In terms of financial viability, Rimba Raya has had as much success as any REDD+ project in Indonesia in obtaining their own funding.

Some projects, such as the Kapuas Hulu project, have a reliable and somewhat long-term funding source outside of the carbon markets. The Kapuas Hulu project in KalBar is run by GIZ's FORCLIME project which has secured a ~26million USD grant through KfW Bankengruppe, a German government-owned development bank. This offers an example of a pathway for REDD+ projects to have financial viability – through donor organizations that are willing to offer substantial funding for a project. In the case of a REDD+ project that is *not* being organized as an ERC, the need for sustained long-term funding is not as urgent as for those that are ERCs. And while this kind of direct donor funding is not always available for some projects, it is for others. In the case of the Kapuas Hulu project, the funding was part of GIZ's budget and therefore obtained before the project was undertaken. There are some other projects that are set to receive funding from the World Bank's Carbon Fund, in a similar manner to the Kapuas Hulu project.

The case of Harapan most clearly illustrates the difficulties in securing sufficient long-term funding, an issue both recognized in the literature (Dixon and Challies 2015; Streck 2012; Busch 2013; Vijge et al. 2016; Phelps 2011) and widely reported by respondents from our research outside of these three case studies. In an experience similar to what has been reported in the literature (UN-REDD Programme 2013) and by many other of our interviewees, project organizers initially thought that funding could be

secured through the carbon market, the ‘Norway money’, or the U.N. REDD+ program itself, but later when financing did not materialize funding alternatives had to be sought. One respondent, associated with another project outside of these case studies put it like this, “We’re trying for REDD, but we feel left out...it’s hard to find funding and sometimes we ask ourselves, what’s in it for those of us running the project?” At the time of our research, Harapan reports their only avenues for securing funding outside of the carbon market were from various donors, which have included: Danish International Development Agency (DANIDA), the German International Climate Initiative (ICI), Singapore Airlines, and through non-timber forest products (NTFPs) (such as gaharu, handicrafts, honey, etc.). Neither these donors nor the non-timber forest products are providing a long-term option for sufficient funding to sustain the project. This has left the project with the challenging task of securing alternate funding while also trying to successfully implement other project goals and tasks. Alternate sources of revenue such as these often cannot provide sufficient financing for a project to remain economically viable –and certainly cannot compete with other potential land uses, support the costs of project maintenance, and last over a 100-year term of an Indonesian ERC.

3.3.2 Community Involvement

While fair and equitable community involvement has been acknowledged as a crucial part of REDD+ and other climate change mitigation programs (UNFCCC 2010), in many places community involvement in REDD+ has not been sufficient (Lawlor et al. 2013; Danielsen et al. 2013; Bayrak and Marafa 2016) and some of the projects included in our case study reflect this as well. Early on in REDD+ the importance of involving forest communities had been acknowledged and incorporated into most REDD+

frameworks (UN REDD Programme 2011; IRTF 2012; Howell 2015). There is increasing evidence to support the positive effect of involving communities in successful forest management endeavors (Stevens et al. 2014; Molnar et al., 2004). While there is still some debate that assuring community rights will necessarily result in successful long-term forest management (Resosudarmo et al. 2014), doing so at least has the potential to improve chances of long-term project success (Agrawal and Angelsen 2009; Stevens et al. 2014). Furthermore, it is almost universally agreed that projects must involve communities in a fair and equitable manner.

Indonesia has a vast population of forest communities, estimates range between 80 and 95 million, defined by the Forest Peoples Programme as “Indigenous peoples who depend primarily on natural...forests for their livelihoods...; rural people who live in or at the margin of natural forests or woodlands, who rely on the forest as a safety net or for supplemental income; smallholder farmers who grow farm trees or manage remnant forests for subsistence and income; artisans or employees in formal or informal forest based enterprises” (Chao 2012, p 8). In order to ensure the fair treatment of the involvement of such communities in REDD+ a system was adopted called Free Prior and Informed Consent (FPIC). The idea behind this is to ensure that communities are involved, and truly understand what they are agreeing to with that involvement.

While reasoning behind the provision of FPIC to communities is hard to disagree with, it has resulted in many communities being approached and informed about REDD+ long before projects could get up and running, and resulted in stakeholder fatigue. Stakeholder fatigue in forestry occurs when, “key stakeholders begin to drop out of the selection process due to lack of perceived progress” (Hagan and Whitman 2006,p 208). Mistrust towards, and doubt about, REDD+ that resulted when the process dragged on over a longer time period (up to three years in

the case of a some projects working to obtain an ERC) was a theme commonly mentioned by community members included in our fieldwork. This is not something that is unknown to project organizers, as one put it, “ *I think a lot of it too is that the stakeholders don’t believe in [REDD+]. So many have failed, so many have talked, then they don’t believe in it anymore. That was sort of us the last few years during the delay. Up until the delay, everybody was supportive, all of our community. Everything was full blast. But then the delay [happened], and they start wondering. But I think in general, worldwide, there’s a fatigue. There’s a lot of fatigue. People have heard and heard and heard.*” – REDD+ project organizer

Beyond initial involvement, the literature reports that community engagement and benefit distribution have proven complicated (Lawlor et al. 2013) which reflects the multi-faceted experience of the stakeholders included in this research. There are many questions that remain for stakeholders of REDD+, in Indonesia and elsewhere, about how to engage communities and how to distribute benefits. For example -- should benefits come in the form of payments, or schools and access to medical care? how to ensure that benefits are not unevenly accumulated by certain members of the community? While the these questions have not yet been answered, many REDD+ project organizers, including those from our case studies, have had to address them as they have moved forward with REDD+ activities.

The Rimba Raya concession is situated next to palm oil plantations, with communities located along the border, as a result these communities are engaged with both the palm oil company and Rimba Raya. Some of the communities have individuals employed by the palm oil company, and also may receive fuel for generators or other benefits from the company. Although community members acknowledge palm oil’s role

in deforestation in the area, they report having mixed feelings about the palm oil company. Rimba Raya's plan for community benefits includes providing alternative employment opportunities, health care, clean drinking water, alternative fuel supplies and other infrastructure (Rimba Raya 2014). While not all of these benefits had been fully implemented at the time of data collection, an independent monitoring agency evaluates Rimba Raya's community engagement to ensure these objectives are being met, which will be discussed further in the monitoring section below. Communities are also still allowed access to the forests for certain things: harvesting of non-timber forest products and for fishing using sustainable methods. As reflected by some community members engagement with the palm oil company, one challenge for Rimba Raya has been to get full engagement and support from these communities, some members of which have demonstrated feelings of fatigue towards the project after hearing about REDD+ for years without seeing what they feel are real results. Part of the reason for this may be due to the delay in Rimba Raya getting full approval for their ERC license. Rimba Raya provided FPIC to the communities upon the initial creation of the project as early as 2010 (Indriatmoko et al. 2014) but as it then took three years for them to get the project running and secure the concession license, there was a delay in real implementation, resulting in stakeholder fatigue.

Community involvement is the basis for the project in Kapuas Hulu, and of the three case study sites they have arguably had the most successful results in incorporating forest communities into their project. FORCLIME has undertaken a collaborative management approach and developed a strong working relationship with the Kapuas Hulu communities. Meetings are held regularly to give the communities information

about, and choices in, project activities and direction. They also have employed community liaisons to work with FORCLIME staff and inform the community at large about updates for the project. Funding was given to each community involved in the project to supplement subsistence sources and income. Each community voted on what to do with the funding, choosing from a variety of non-timber forest products (coffee, agarwood, rubber, fish ponds, or vegetable gardens) and each community now has one or more of these underway. The main challenge facing Kapuas Hulu and community involvement has to do with the Indonesian system of land tenure and establishing community ownership of the forest, and is something characteristic of challenges for REDD+ projects and other aspects of forest management in Indonesia (Sunderlin et al. 2014; Barr et al. 2006). More specifically in the case of Kapuas Hulu, there is currently a not-yet-activated palm oil license overlapping with the community forest. Based on our interviews it seems that while the palm oil company has approached community members about activating their license, the community remains mostly against the development of palm oil in the area. While a few community members are enticed by the cash and jobs offered by the palm oil company, many other community members are suspicious. They have seen other areas converted to palm oil, and report that nearby communities, some of whom are relatives, are not pleased with the results – citing reports of a lack of fish and other items from the forests along with frequent flooding and other issues. As one community member put it, “We do not want palm oil here, we know if we had it here we would not have clean water anymore.” As a result community support for protection of the forest remains strong. Yet, while FORCLIME’s REDD+ project demonstrates strong community engagement, the situation remains tenuous because of insecure forest tenure.

Community involvement has come with challenges for the Harapan project, as the Batin Sembilan have been marginalized and land conflicts have existed in the area long before the project was established (Colchester et al. 2011). While some nomadic Batin Sembilan still reside inside within the concession, the nomadic tendencies of the Batin Sembilan have diminished with time, as a result of shrinking territory caused by the expansion of palm oil and government resettlement programs. Some of the Batin Sembilan now live in a permanent settlement that was developed with the assistance of the Harapan project, and according to many project organizers many community members have been drawn to the project site because of the diminished forest cover in the surrounding area. The Batin Sembilan still do not hold land rights to the area, though Harapan has established an agreement with the local communities living in and near the concession to allow use of parcels of land and collection of NTFPs. Communities have also been employed by the Harapan project to plant new trees, run the nursery, and guard the concession from encroachers. A small school and access to health care has been made available to all community members living in the Harapan concession. While the relationship between Harapan and the Batin Sembilan is generally amicable as reported by our respondents, there have also been disputes over land rights when customary leaders engaged in informal land trade agreements, resulting in conflicts (Beckert et al. 2014).

3.3.4 Enforcement of project boundaries

In many countries where REDD+ is being implemented, achieving and maintaining effective capacity for local forest governance is a challenge (Minang et al. 2014; Dunlop and Corbera 2016). This was corroborated by the reported experience of

respondents from our study, many of whom described difficulties in enforcing boundaries within allegedly protected REDD+ project areas. Enforcement as used in this discussion is the ability of those running a REDD+ project to control forest cover change related activities within the boundaries of their project. Maintaining capacity for governing over and enforcing project boundaries is essential for achieving project success in order to prevent widespread encroachment and forest degradation. Yet, a lack of ability to enforce boundaries of protected forest areas, such as REDD+ projects, is one of the challenges frequently mentioned in both the literature (Gaveau et al. 2013; Enrici and Hubacek 2016) and by our respondents. Enforcing boundaries of protected forest areas is something that is a problem in Indonesia for both REDD+ activities as well as national parks (Yuliani et al. 2010; Murdiyarso et al. 2011; Indonesia Ministry of Forestry 2014). The lack of ability to enforce project boundaries often manifests as illegal encroachment into project areas and when local authorities do not act on this encroachment, demonstrating a lack of support for projects. Such lack of support from authorities was reported by respondents as either failure to approve and enforce project boundaries, failing to take action against encroachers, or collusion of the authorities with encroachers.

In the cases of our study sites, and elsewhere (Gaveau et al. 2013; Gaveau, Wandono, and Setiabudi 2007), encroachment has become substantial, and continues to grow over time. In some cases smallholder palm oil encroachers claim to have been sold permits for the land, and identification of who sells the permits has been elusive. Other of these small holders are encouraged by large palm oil companies bordering project sites to encroach on the project concession. Once these smallholders have gained access to the area, they quickly deforest patches of the project area and build housing for themselves.

When confronted by project organizers, they refuse to leave and retaliate if further action is taken. One project organizer put it like this, *“They’re selling the land in our concession. And we’ve asked some of these people, “Oh, we bought the land. What can you show us?” And the only thing they can show us is that they paid money to somebody.”* – REDD+ Project Organizer. Project organizers are not willing to engage in such a conflict, and without support from local authorities, they are left without any avenue for recourse. *One project organizer explained it like this, “On our land, we have 400 families that have arrived since 2008...they’re taking up over 5,000 hectares. They have churches, rice paddies, [a store]...how are we supposed to get rid of them? The authorities won’t do anything.”*

Additionally, if a REDD+ project is operating as an Ecosystem Restoration Concession, the company that is running the project must first get approval from the central government for the license, and then have the boundaries of the project approved, also by the central government. Once this happens, the local government must also then re-approve the boundaries set out by the project organizers and the central government. In some cases it has been reported by project organizers that local authorities have been slow or reluctant to do this. Some stakeholders from our research have suggested that this reluctance happens because of payments to authorities from the encroachers and a desire by authorities for payments from project organizers.

During data collection, encroachment in the project sites and in other protected areas was observed in a number of ways – illegal logging, artisanal mining, and palm oil encroachment by both small-holders and large companies. Often encroachment can harm the community and raise challenges for achieving REDD+ project goals. It is also rarely

halted by local authorities, who may have different plans for the area other than what has been designated by the central government. Local authorities are susceptible to corruption and often will accept bribes from encroachers. As one of our respondents described it, *“The community that has been there for a long time welcomes our help to stop [the illegal logging] because in the old days, they could control who would take [from the forest]. Now there’s police operating with the illegal loggers. So if somebody [from the village] doesn’t cooperate, they’re put in jail. In fact, they actually put somebody from the village in jail because they refused to [work with the] illegal loggers and then confiscated [the community member’s] timber, took it and sold it.”* Many respondents report that if facilitators of a REDD+ project want help from authorities in enforcing their project area, those authorities often want a bribe – which many projects are either unwilling or unable to give. Lack of ability to enforce boundaries and encroachment was seen in all three case study sites, as discussed in more detail in the following paragraphs.

All three of the case study sites face challenges with having the capacity to enforce project boundaries. The Rimba Raya project has experienced some encroachment, from both illegal loggers as well as palm oil. Rimba Raya has been able to keep encroachment at a level low enough to maintain their carbon certification, but it is a significant enough problem to warrant constant attention. Lack of support from local officials can be seen by the instances of encroachment that occur, and land use conflicts are endemic to the area (Indriatmoko et al. 2014). For example, illegal loggers enter the area, perhaps after purchasing “permission” to enter the area from someone not involved with Rimba Raya but connected to local authorities. When approached by the project and

asked to leave, they expect to be compensated for the fee they have paid for “access” to the area. The palm oil operation bordering Rimba Raya has also encroached on the concession, and encouraged community members to do so as well, in part encouraged by the local authorities failure to approve the border of the concession, as outlined by the project organizers and approved by the Ministry of Forestry. Beyond this, there are also local authorities that have used part of the area inside the Rimba Raya concession for their own use, degrading the forest in the process.

In the case of Kapuas Hulu, the challenge with enforcement of project boundaries differs from the other two case study sites. Strong relationships and a project built collaboratively with the local communities have meant that encroachment has not been reported as an issue for the project in Kapuas Hulu. Most of the project area is recognized community forest that has been established for a long time, and forest access and use are regulated by the local communities. Yet while the communities maintain authority over the project site, there is a major potential challenge for the Kapuas Hulu project due to the fact that the community forest overlaps with a palm oil concession. This kind of overlap is common throughout Indonesia, and is problematic for many forest governance scenarios (Steni and Hadad 2012; Stevens et al. 2014). As discussed above, the company that holds the license has been trying to gain community approval to activate their license. Although the legality of whether or not they can activate the concession is unclear, often palm oil companies want community approval in order to avoid conflict and violence. Many of the community leaders in Kapuas Hulu, and community members themselves are against palm oil development. They report having seen palm oil destroy nearby community forests where relatives live, promises made by the palm oil companies

are not held, and sources of livelihood are then gone, taken over by palm oil. While many of our respondents report that the palm oil company will not activate their license without support of the forest communities of Kapuas Hulu, the scenario does make their tenure over their forests vulnerable from a legal standpoint (Contreras-Hermosilla et al. 2005).

Encroachment remains a major challenge for Harapan towards achieving their goal of protecting & restoring the forest in their concession. There is a record of land use conflicts in the area and evidence that such conflicts may be increasing (Beckert et al. 2014). While similar in nature to the challenges to governing agency at Rimba Raya, the encroachment in Harapan is more widespread. Harapan has experienced encroachment on a total of 18,758ha or 19.14 percent of the concessions total 98,000ha, and at an average encroachment rate of 2,623ha/year, could potentially have the entire project area deforested by encroachment over the next 40 years (Silalahi and Erwin 2015). There has also been a lack of support by local officials, as in the case of Rimba Raya. There are reported instances of the local authorities colluding with encroachers or expecting unofficial incentives from project organizers, something not allocated for in a budget at least partially funded by private entities and international aid agencies. Encroachment has occurred primarily by small holders from other areas of Indonesia. Often individuals are sold palm oil “permits” illegally for the area inside of Harapan. Without support from local authorities, Harapan is left to their own devices to deal with the encroachment. Many of these palm oil smallholders move in quickly and build makeshift homes on the land where they are planting. Once they have done this, it is nearly impossible for them to be ejected from the area by the project organizers as they are often willing to resort to violence to defend their land.

3.3.5 Monitoring

Monitoring, reporting, and verification (MRV) is essential in order for a REDD+ project to overcome challenges, assess the impact of policies on the ground, avoid unintended consequences and prove to other stakeholders (particularly funders) that they are having, a net positive benefit for carbon sequestration and biodiversity (de Sassi et al. 2015). While monitoring technology currently exists for meeting the needs of REDD+ (Goetz et al. 2015), not all countries have begun taking advantage of this technology. Many countries, and projects in Indonesia, have yet to establish baselines of carbon stock and for potential forest cover loss in business as usual scenarios (Virah-Sawmy et al. 2015). The absence of these baselines make it difficult to evaluate projects solely based on their success in achieving emissions reductions. Baselines combined with effective monitoring are essential for demonstrating carbon sequestration, or emission prevention through additionality (preventing deforestation that would have happened under a business as usual scenario), biodiversity preservation, and even proper community involvement (de Sassi et al. 2015; Herold and Skutsch 2009). Establishing a baseline for proper monitoring of carbon stocks and deforestation rates allows for measurement of future rates of change, remote sensing provides one of the most efficient and rapid ways to achieve this (Pelletier and Goetz 2015). Monitoring of forest cover can to a large extent be done through remote sensing (Goetz et al. 2015), but even with the technological assistance of such methods, remote sensing still requires ground truthing. Many countries undertaking REDD+ may have the technology for such monitoring, but have yet to implement a MRV mechanism (Ochieng et al. 2016). Furthermore, thorough biodiversity and community monitoring require actual site visits. Safeguards have been proposed as mechanisms for ensuring co-benefits such as protection of communities and

biodiversity in forests. However, in many countries safeguards remain vague (Korwin and Rey 2015) and based on the literature (Steni and Hadad 2012) and the data collection for this research, this is no less true for Indonesia. Despite the importance of co-benefits and the necessity to monitor them, very little attention to date has been given to monitoring co-benefits (Vijge et al. 2016). Furthermore, the diversity of projects and their funding sources in Indonesia means that not all demonstration activities need or choose to adopt safeguards for ensuring co-benefits that have been created by entities such as the UN.

Many countries and projects are still figuring out exactly how to set up an MRV system (Ochieng et al. 2016). Monitoring of carbon stocks can be done in a number of ways, including both community-based monitoring or monitoring by an independent agency. Community-based monitoring of forest cover over a number of years has proven to be accurate, cost-effective, and to increase community involvement in other aspects of forest management (Brofeldt et al. 2014). In cases where the community may not have enough members to monitor a very large REDD+ concession, other methods for monitoring must be used.

Independent monitoring, such as that carried out using a carbon offset standard or remote sensing analysis, allows verification that projects are achieving what they say that they are. Monitoring must also include the community involvement and biodiversity aspects of projects to ensure that fair and equitable practices are being undertaken and that there is some assurance of the long-term viability of a project (Panfil and Harvey 2015; de Sassi et al. 2015). Carbon offset standards are guidelines for monitoring, reporting, and verifying forest carbon projects through independent entities. There have

been numerous carbon offset standards developed (Kollmuss et al. 2008). The Community Climate and Biodiversity standard and Voluntary Carbon Standard are two monitoring entities recognized by the international carbon markets. The Voluntary Carbon Standard was formed by the Climate Group, International Emissions Trading Association (IETA) and The World Economic Forum and is now operating as an NGO. The Voluntary Carbon Standard focuses on evaluating projects for reduced greenhouse gas (GhG) emissions but partners with other standard verification schemes, such as Community Climate and Biodiversity, to provide projects with certification for carbon co-benefits. Community Climate and Biodiversity was created by the Climate, Community & Biodiversity Alliance, a collaboration among multiple NGOs (Conservation International, CARE, Rainforest Alliance, The Nature Conservancy and the Wildlife Conservation Society) interested in facilitating the effort towards climate change mitigation through reduction of deforestation and forest degradation. The Community Climate and Biodiversity standards are used to evaluate project design (as opposed to verifying carbon stocks) by the three main components of community, climate and biodiversity while also assessing environmental and economic sustainability. While there have been concerns regarding the limitations of Community Climate and Biodiversity (Melo et al. 2014), this kind of monitoring and verification is essential for donors, including the developing carbon market, and interested stakeholders at all levels.

Only one of the three projects observed for our research is currently being evaluated by an independent agency. Rimba Raya has received certification from both Community Climate and Biodiversity and Voluntary Carbon Standard. In 2015 Rimba Raya received VCS and Community, Climate, Biodiversity certification, which included

assessment of carbon stock, biodiversity levels, and their relationship with the communities on their concession (Infinite Earth - Rimba Raya 2015). This certification gives the project credibility when dealing with donors and the press. Neither of the other two projects has sought certification by a carbon offset standard entity. In the case of Kapuas Hulu, it may not be deemed necessary as the project already has funding provided. In the case of Harapan, it is unclear what prevents them from seeking certification. While it is possible that many REDD+ projects have successfully achieved carbon sequestration goals and co-benefits, having the certification of an independent monitoring agency such as VCS allows a project to demonstrate verified results to stakeholders of all categories (including funders and policy makers).

3.3.6 Carbon sequestration and biodiversity preservation

While the other four factors discussed here are components of REDD+ projects that contribute to success, this final factor is an outcome – without which a project cannot claim to have achieved success in respect to the objectives of REDD+. All of the other components that have been discussed in this article up until this point can have an impact on how projects are able to achieve goals for carbon sequestration and biodiversity preservation. Carbon sequestration and biodiversity preservation can be maintained or improved with sufficient financing, community collaboration, and the capacity to enforce project boundaries. Monitoring allows a project to demonstrate that a project is achieving what it has set out to do, and successfully sequestering carbon and preserving biodiversity.

The initial goal of REDD+ was to reduce carbon emissions by reducing deforestation and forest degradation, and shortly thereafter biodiversity preservation was

acknowledged as an important component of this (Gibbs et al. 2007). In the initial period after REDD's introduction, it became clear that having carbon sequestration alone as a goal is problematic. In fact some techniques for increasing carbon sequestration can lead to a decline in biodiversity levels (Putz and Redford 2009). Our discussion here will focus primarily on the carbon aspect of forest monitoring related to REDD+, but also acknowledge that biodiversity preservation is just as essential to success in REDD+.

The Rimba Raya project has demonstrated success through carbon sequestration, independently verified by the Verified Carbon Standard. The report states, "...emission reductions from the Rimba Raya Biodiversity Reserve project for the period of 1 July 2009 to 30 June 2010 amount to 2,181,352 tonnes of CO₂ equivalent after a 10% buffer pool deduction amounting to 242,373 tonnes of CO₂ equivalent is taken into consideration." (SCS 2013, p 2). Rimba Raya demonstrates these outcomes of verified carbon sequestration and biodiversity preservation through independent monitoring. Despite challenges the project has faced, this is supported by their successes in securing sufficient funding, collaborating with the communities, and having enough ability to enforce boundaries to improve carbon and biodiversity in the face of potential encroachment.

For Kapuas Hulu, efforts towards community capacity building and empowerment may have reduced community forestry uses, which could in turn have resulted in an increase in, or maintenance of, carbon sequestration and biodiversity levels. Furthermore, these projects may also help empower the community to prevent the palm oil companies from being able to activate their licenses overlapping with the community forest area, which, if verified, would demonstrate additionality. As far as project

organizers and the community have reported, the forest cover in the area has remained at a steady rate. These efforts are supported by the project's funding and the communities' ability to enforce project boundaries. However, without monitoring it is difficult to assess exactly how much carbon or biodiversity has been saved or gained since project inception.

Harapan Rainforest was previously designated as a timber concession, and so it stands to reason that the carbon sequestration and biodiversity levels have improved there since PT REKI obtained the ERC license. However, the lack of ability to enforce project boundaries and absence of independent monitoring indicates that there is uncertainty regarding this. It could be argued that all three sites have achieved some level of carbon sequestration and biodiversity preservation, at the very least preventing legal palm oil or logging to occur on project sites. However, this is harder or impossible to demonstrate in instances where monitoring has not been undertaken. Without independent monitoring of the site how much carbon and biodiversity levels have changed since the project began have not yet been demonstrated.

3.4 Conclusions and Discussion

From the perspective of forest governance, it is hard to argue that any kind of ERC or forest protection mechanism is not an improvement upon a mining, logging, or agriculture concession. However, assessing the criteria that can help a project to achieve the outcome of carbon sequestration and biodiversity preservation offers the opportunity to assess the major challenges and opportunities for REDD+ projects in Indonesia and potentially elsewhere. It is helpful to reflect on the similarities and differences among project sites for each criteria.

In terms of financial viability both Rimba Raya and Kapuas Hulu have established very different, yet stable funding situations. Rimba Raya's process of establishing their REDD+ project and selling carbon credits on the market provides a useful example of how a REDD+ project could be run, yet at the time of this research was the exception rather than the rule. Kapuas Hulu is representative of a number of other REDD+ projects throughout Indonesia that are started by NGOs or institutions that may already have funding available. However, the challenge that long-term financial viability presents for Harapan seems to be representative of the experience of many of our interviewees from outside the three case study sites, as well as the literature (UN-REDD Programme 2013; Dixon and Challies 2015).

Community involvement varies at each site, though Kapuas Hulu presents an example of how a project might look when designed with collaborative management techniques, which have been successful for ecosystem management practices in other instances (Daniels and Walker 1996; Fisher 1995; Tania, Daniel, and Pfeffer 2003). Despite stakeholder fatigue, Rimba Raya has also developed a working relationship with verified co-benefits for communities within the project sites. Harapan rainforest faces a challenging situation with their communities, in good part because of the conflict and marginalization of those communities before the project began.

In spite of tenure challenges, ability to enforce project boundaries could be argued to be the strongest in Kapuas Hulu because of collaboration with the forest communities who govern the forest area included in the project. While both Rimba Raya and Harapan face challenges with having governance agency, and the ability to prevent unsanctioned deforestation on their project sites, based on the amount of encroachment the problem

seems to be significantly worse for Harapan. This may at least partially have been a larger problem because the project area was being encroached upon before Harapan's ERC was granted in 2008 (Silalahi and Erwin 2015). Harapan's challenges in this regards could also potentially be attributed to, or compounded by, challenges with the other factors. Community involvement has been challenging, weakening the ability of those communities to enforce boundaries as is seen with Kapuas Hulu. Moreover, Harapan lacks funding and the flexibility to use funds to come up with alternative strategies for dealing with encroachment.

Without monitoring it is hard for any project to claim improvements in forest cover, community benefits, or biodiversity levels. Yet despite this, independent monitoring may not always make sense for every project, as in the case of the Kapuas Hulu project where independent monitoring would be expensive and is unnecessary for securing funding. If a national level agency is established for monitoring forest cover, this will help with monitoring of projects. This is a distinct possibility as the technology for proper monitoring of REDD+ currently exists, and is going to continue to improve in coming years (Goetz et al. 2015).

Carbon stock maintenance, or improvement, and biodiversity preservation are essential goals for any REDD+ project. They cannot be demonstrated without proper baselines and monitoring. Rimba Raya is the only project to demonstrate verified results. However, having an ERC license such as Harapan's must be an improvement over any other kind of forest use license which, based on the evidence from other production forest areas (Margono et al. 2012), would likely result in significant forest cover loss. Despite this, as is clear from the numbers regarding Harapan's encroachment, having long-term

success in improving forest cover in REDD+ projects will also likely require attention to the other criteria we have discussed here, such as funding, community involvement, and governing capacity. The results of this research demonstrate that when there are challenges towards the inputs of financing, community involvement, governing capacity, and monitoring they can compound and ultimately prevent a project from achieving its ultimate goal of improving forest carbon stocks and biodiversity preservation.

Chapter 4: A REDD+ crisis of confidence: an ethnographic assessment of stakeholder experiences across scales

“I mean, you just see the way people establish land claims...because land tenure is so screwed up in Indonesia, is people burn. So you just go and burn a section of forest and then you put up a sign that says “This is my land.” And you just go back and burn it periodically. So you see that everywhere...And I was looking at small-scale gold-mining, which destroys forest habitat irrevocably beyond repair. I just went to one area and it was like...Mordor out of Lord of the Rings. It literally is total and complete irremediable devastation. And this is happening all over Kalimantan and Sumatra and Papua and other places...” – Stakeholder of REDD+ in Indonesia

“Working on REDD+ is like chasing clouds.” – Stakeholder of REDD+ in Indonesia

“REDD+ is like a moving target.” – Stakeholder of REDD+ in Indonesia

4.1 Introduction

That global climate change is caused by anthropogenic carbon emissions is now beyond dispute (Pachauri et al. 2014). Such changes to the global climate system are resulting in widespread environmental and ecological changes, which in turn will have dire consequences for the health and livelihoods of millions of people around the world (IPCC 2014a). Tropical forests play a key role in both the mitigation and adaption to climate change and are a nexus between the global causes and local consequences of environmental change. Annual global deforestation and land use change from human activities are estimated to having contributed as much as 32 percent to anthropogenic emissions from the year 1750 to 2011 (Stocker et al. 2013) and are the largest sector contributing to global greenhouse gas emissions, after fossil fuel consumption (IPCC 2014b). In addition, deforestation results in the loss of vital ecosystem services including regulating services (such as soil integrity, hydrological regulation and pollination services), provisioning services (forest foods, fuelwood, NTFPs) and cultural services,

which support the livelihoods, safety and food security of millions of people worldwide (Krieger 2001; Millenium Ecosystem Assessment 2005). ‘Forest dependence’ is a complicated term and it is hard to estimate just how many people are globally directly dependent on forests for their livelihood. According to (Chao 2012), up to 1.6 billion people rely on forests to some extent and 1 billion rely directly on forests for their livelihoods.

In an effort to reduce the amount of emissions from deforestation, the United Nations have proposed Reducing Emissions from Deforestation and forest Degradation (REDD), a mechanism through which forests – and carbon sequestration – become commodified and market based mechanisms are used with the aim to reduce carbon emissions (Holloway and Giandomenico 2009). REDD+ is a more recent evolution of the REDD program and includes other co-benefits -- considerations beyond emissions reduction, including: biodiversity preservation, soil conservation, water regulation, improved land tenure, enhanced governance and decision making, and improved livelihoods for forest communities (United Nations REDD Programme 2013).

The REDD+ program is one of the largest, and arguably most complex, environmental management schemes in human history. Since its creation in 2005 REDD+ has been introduced in over 29 countries. While there have been efforts to implement REDD+ in many countries (Sills et al. 2014) the required methodologies, political considerations, funding mechanisms, and monitoring systems have yet to be fully established, leaving its future uncertain. Of the many places where REDD+ is being implemented, Indonesia, provides an important example for understanding the potential for REDD+. Indonesia has the third largest tropical forest in the world and one of the highest rates of deforestation globally (Hansen et al.

2013; Margono et al. 2014). It is one of the most biodiverse places on the planet (Convention on Biological Diversity 2016), and since the mid twentieth century (Barr 2001; Hansen et al. 2009) and continuing into recent years (Margono et al. 2014), there has been significant deforestation and degradation to Indonesia's tropical forests leading to high levels of carbon emissions (Carlson et al. 2012; (WWF Indonesia 2008). REDD+ efforts began there in 2008 and since then, over 40 REDD+ demonstration activities have been initiated, though not all of these are still running. REDD+ plus thus presents widespread opportunities for Indonesia, to benefit financially from their forest reserves and prevent the environmental and social consequences of large scale deforestation. Despite the promises that REDD+ offers for Indonesia's forests (Busch et al. 2015), its implementation has been complicated as a result of the political climate in Indonesia (Enrici and Hubacek 2016; Galudra et al. 2011; Brockhaus et al. 2012), high demand for the resources within forested lands (Abood et al. 2014) , and the country's history of questionable forest management practices (Transparency International 2011; Human 2013).

REDD+ projects in Indonesia, and elsewhere, have experienced various degrees of success and failure. Identifying the specific challenges and opportunities that exist for REDD+ is necessary to inform future policy and implementation if success is to be achieved in Indonesia and abroad. Even though REDD+ in Indonesia began in 2007, many questions remain about how REDD+ will achieve what it is intended to. The aim of this research is to identify and elucidate challenges and opportunities for REDD+ through the perspective of people working on the REDD+ program in Indonesia. This paper presents the perceptions of stakeholders and practitioners involved in REDD+ in Indonesia at multiple scales varying from the international to the local. The information included here is the result of qualitative research with stakeholders of REDD+ working at the international, national, and local scales in Indonesia. Comparing the analysis of ethnographic data collection with a policy and literature review allows for an in depth and descriptive look at the subject of research, in this case REDD+ in Indonesia.

4.2 REDD+ & Indonesia's forests

REDD+ implementation in Indonesia has received much attention – the government of Indonesia has publicly committed to REDD+, created REDD+ agencies, and supported REDD+ efforts. In 2010 the government of Norway promised \$1 billion USD, signing a letter of intent with the government of Indonesia, for results based efforts towards deforestation reduction. More recently, Norway has recommitted their support and the United Kingdom and Germany have promised more funding to Indonesia for successfully meeting deforestation reduction goals (Government of Norway, Government of the United Kingdom, and Government of Germany 2015). As of yet none of the results based money from Norway has been released (NORAD 2016), the deforestation rate in Indonesia remains high (WRI GFW 2016), and based on the results of this research the majority of REDD+ stakeholders feel that it remains uncertain how successful REDD+ has been, or will be in the future.

In 2013 Indonesia had the highest rate of deforestation on the planet (Margono et al. 2014) and is known for its complicated forest governance context (Contreras-Hermosilla et al. 2005; Indrarto et al. 2012). The term governance as used in this article is referring to the Indonesian government agencies, including those at the national, provincial and local levels, and policies that create a network of control over forestry and other sectors. The direct drivers of deforestation in Indonesia include agriculture (primarily palm oil), mining, and timber harvesting— all of which frequently occur in highly forested areas of Indonesia (Abood et al. 2014; Kissinger, Herold, and De Sy 2012; Indrarto et al. 2012). Since the fall of the Suharto regime, Indonesia's government has been decentralized, leaving local governments with a fair amount of authority over

regional issues including forest management. District authorities have been the most influential, though a new regulation, “Law Number 23 about Local Government”, UU/23/2014, may shift that power over to provincial governments in the future. Because of this decentralized system, Indonesia’s initial strategy proposed a nested framework for REDD+. Much of the initial development of REDD+ occurred at the project level and as a result there has been a good deal of variation in the way projects have manifested. There are stakeholder groups in Indonesia involved in REDD+ implementation at the national, provincial, and local levels with a diverse range of interests in the outcome of the program. According to the National Strategy, groups and entities such as corporations, NGO’s, and communities can work within this nested framework to implement a REDD+ project. As a result, there are currently dozens of REDD+ demonstration sites where projects are underway. These demonstration sites display a wide variety of project structures and project goals (Global Canopy Programme 2013; REDD Net 2013). There is no single established source of funding for REDD+ projects – many report receiving funding from international aid agencies or multilateral development banks, some projects are working to secure funding from the carbon markets, and other projects are funded and facilitated by NGOs. There are projects that are still searching for secure, long-term funding.

Projects can also vary in how they are implemented – some have obtained a license from the Indonesian Government to operate an Ecosystem Restoration Concession (ERC). ERC’s are intended to allow a business entity to restore the forest estate in degraded areas of production forest by engaging in economic activities such as non-timber forest production, eco-tourism, or sale of carbon credits -- as long as these

activities do not contribute to environmental degradation on the land. Production forest (hutan produksi) is designated for commercial and industrial use, and experiences high rates of use and deforestation (Indonesia Ministry of Forestry 2014). In the absence of an ERC license for the area, it is most likely that the area will be cleared, converted, or further degraded from its current state. While several REDD+ projects have gone the way of becoming an ERC, the government has been slow to grant licenses (Walsh et al 2012) and costs of running them have the potential to outpace funding.

In contrast to getting a license for a particular ecosystem as in the case of ERCs, projects can also be based primarily on capacity building for communities in order to establish their forests as an official customary forest. Or, as in the case of the Carbon Fund, some projects may approach REDD+ at a larger scale than the community, by engaging entire districts (*kabupaten*) in REDD+ activities (World Bank Group 2013). Regardless of the differences among the manifestations of REDD+ projects in Indonesia, our research with stakeholders from a multitude of projects operating at various scales of implementation indicates some common frustrations and a few points for hope in the future. Indonesia has a complex governance system of inherent tensions between devolution of authority to provinces and districts (*desentralisasi*) and an inherent tendency towards centralization and state control. Forest governance in Indonesia is particularly complex (Enrici and Hubacek 2016) and, as indicated by some of our respondents, requires a nuanced understanding as well as long-term perspective. Corruption, nepotism and patronage has been a major problem for Indonesian politics and governance at the local (Henderson and Kuncoro 2011; Olken 2005) and national levels (Dick and Mulholland 2016), and this is no less true for the forestry sector (Transparency

International 2011). Rules and regulations in Indonesia can also be complicated and sometimes even outright contradictory (Ewing-Chow and Losari 2015; Galudra et al. 2011). Land tenure and licensing have proven problematic -- there are many instances of overlapping and conflicting tenure (Contreras-Hermosilla et al. 2005). Governing authority between the national and district levels often overlaps (Steni and Hadad 2012), and sometimes there is a disconnect between agencies such as the Ministry of Forestry and district governments, both of which hold authority over forest licensing and enforcement. Attempts to reconcile overlapping and contradictory mandates between different branches and levels of government – best exemplified by the One Map Initiative – have stalled and Indonesia remains without a universally recognized official record of land tenure and forest governance (Samadhi 2013). In addition, constitutional court decisions given in favor of indigenous rights lobbies (Natahadibrata 2013) have further complicated the issue of forest governance and ownership creating a new legal tension between traditional customary ownership and management of forests and the state's perceived monopoly over all forest lands. While these topics are more extensively discussed elsewhere (Enrici and Hubacek 2016; Indrarto et al. 2012; Brockhaus et al. 2012; Djogo and Syaf 2004), this research offers an in depth look at how stakeholders involved directly in REDD+ experience these challenges, and can offer more insight into opportunities for future implementation.

Table 3: Examples of REDD+ project types in Indonesia

Type of REDD+ Project	Locational basis of Project	Funding source	Focal point for conservation activities
Ecosystem Restoration Concession	Ecosystem-based license in production forest	Private entity which holds the ERC – donors, carbon fund, NTFPs, etc.	Concession based on the ecosystem and restoration of the ecosystem
Community Based Project	Centered around <i>hutan adat</i> (community forest)	Usually funded by an NGO or Development organization	Empowering forest communities and improving tenure
Carbon Fund Sponsored	Centered around an entire district	The Carbon Fund	Engaging the district, including local governments, NGOs and forest communities in forest conservation activities

4.3 Methods and case study

The REDD+ program involves collaboration among stakeholders and stakeholder groups operating in a number of geographical locations and at various spatial scales. Stakeholders for the purposes of this research are defined as people who are, or have extensively been, directly involved in the REDD+ program. There are stakeholder groups in Indonesia involved in REDD+ implementation at the international, national, and local levels and all have a range of interests in the outcome of the program. To clarify the distinctions between these scales – the international scale involves foreign organizations that are operating in Indonesia, often with offices at the national scale. At the international level there are stakeholders such as foreign governments, multi-lateral

development banks, aid & donor agencies as well as Big International NGOs (BINGOs). The national scale includes Indonesian agencies that are operating from a central perspective. At the National level there are agencies of the Indonesian Government including REDD+ agencies (some of which have phased out), the Indonesian Ministries, policy makers, civil society organizations and others. The local level here refers to the district or project level. At the local level there are local NGOs, or satellite offices of the BINGOs, district and provincial governments, REDD+ project organizers, and indigenous forest communities. In some instances stakeholders might be operating at both the local and the national scale, traveling between locations.

Data collection was undertaken from 2012 to 2014 in the form of participant observation, interviews, and a review of relevant forest policy. This ethnographic research was supplemented by a range of other sources including newspaper and other media reports, research publications, grey literature, and policy documents in order to understand the context of REDD+ stakeholder experiences and potential disconnects between the literature and what was happening on the ground. In the Indonesian context it can be very difficult to obtain reliable information about the realities of REDD+ and forestry. In particular there are often stark differences between public pronouncements, official documents and the reality on the ground. Thus, triangulating the data by including a more full spectrum of sources from international to local scales – and combining multiple sources, such as literature and forest policy, with interviews among stakeholder groups, provides insight into how international and national initiatives manifest themselves on the ground, increases the validity of the data (Decrop 1999) and helps to bridge the gap between literature, policy and reality.

This research was conducted with stakeholders from all of the above listed stakeholder categories and included: individuals working for foreign governments, employees of multi-lateral development banks, academic researchers, individuals working for aid & donor agencies, employees of domestic and international NGOs, as well as Big International NGOs (BINGOs), representatives of the Indonesian Government, policy makers, members of civil society organizations, district and provincial government officials, REDD+ project organizers, and leaders and members of indigenous forest communities. Though many Indonesians are involved in REDD+ at all scales, many foreign individuals are also involved in REDD+, operating through research agencies, donor entities, foreign governments, and NGOs. The interview sample of 71 stakeholders of REDD+ included 45 Indonesian and 26 foreign respondents. A chain referral and preferential sampling method was used, and interviews were conducted with prominent stakeholders from all available groups with an effort to include REDD+ participants from a broad and representative range of stakeholder groups (Bernard 2006; Charmaz and Belgrave 2002).

Interviews in Indonesia were conducted in English and Bahasa Indonesia, the official language of Indonesia and most commonly spoken dialect of the archipelago, or with the assistance of a local translator. Data collection took place in Jakarta and Bogor, as well as in a variety of locations in provinces and districts where REDD+ is being implemented. A small number of interviews were also conducted in Washington, DC where some REDD+ stakeholder groups have headquarters. Informal semi-structured interviews with informants from key stakeholder groups were one of the primary tools for data collection. These kinds of interviews have proven advantageous to studies such as

this that include a wide variety of respondents representing different viewpoints because they allow the researcher to have some uniformity among interviews for comparison while also providing room for exploring important topics more in depth (Bernard 2006). See Appendix A for the interview guideline. The interviews consisted of approximately five to seven standardized questions developed based on relevant literature and preliminary scoping fieldwork. This initial set of questions was followed by additional questioning to further explore topics brought up during each interview. Interviews began with broad questions aimed at getting a general understanding of respondent's experiences with REDD+, and when topics relating to challenges, successes, or perceptions of REDD+ were mentioned those were explored in more depth. 18 meetings were attended in total, and include nine at the national or provincial levels relevant to REDD+ policy and strategy as well as nine local meetings relevant to REDD+ implementation and stakeholder engagement. Those meetings selected for inclusion in the study included any meeting that was directly or indirectly related to REDD+ implementation at any scale, and that was open to the public, or to which an invitation was extended. Information about national scale meetings was obtained through contacts in the Indonesian government, or other foreign governments, as well as through the Center for International Forestry Research (CIFOR) whose headquarters is in Bogor, Indonesia. Information about local scale meetings was obtained through NGOs, project organizers, local communities, and local governments. At these meetings special attention was paid when stakeholders mentioned successes, opportunities, challenges, and perceptions of REDD+.

When possible interviews were recorded with permission of the respondent, and

in the case of the few exceptions meticulous notes were taken of the interview. Grounded theory and inductive methods were used for data analysis. Using grounded theory and inductive methods means using a bottom up, rather than a top down, approach for forming frameworks and research conclusions (Charmaz 2011; Corbin and Strauss 2007). Interviews were transcribed and entered into a TAMS Analyzer database in order to apply this grounded theory approach to analyzing the data (Charmaz and Belgrave 2002; Charmaz 2006). Following an inductive coding method (Corbin and Strauss 2007) interview transcripts, and meeting notes and transcripts, were reviewed at various stages of data collection to develop a list of coding categories based on recurring themes and issues mentioned by respondents. All interview transcripts were coded using these categories. The themes that emerged from the interviews were used in conjunction with literature and policy review to identify the major challenges and opportunities as discussed in the following sections.

4.4 Results

4.4.1 Lack of Pathways for Implementation

One of the main themes presented by stakeholders was that there was a lack of pathways for implementation of REDD+ projects. This could be categorized into several more specific manifestations -- (1) Corruption is still a major problem and can result in an inability to enforce project boundaries (2) Complicated and often confusing governance, regulations and policy create difficulties for project implementation. (3) Securing sufficient funding is a major challenge for many stakeholders. All of these challenges can compound and create a situation in which it is often difficult for project organizers to move forward with a REDD+ project – for example, when licenses are

difficult to obtain, stakeholders report that it becomes harder to secure funding. And without sufficient funding, it can be a challenge for projects to secure successful outcomes. Stakeholders also expressed that policy and regulations in Indonesia can often be complicated and outright confusing, a characteristic of Indonesian forest governance that has been well documented (Bell 2010; Bakker and Moniaga 2010; Indrarto et al. 2012). Confusing regulations coupled with overlapping authority between national and regional governments, another characteristic of Indonesian forest governance (Barr et al. 2006), was reported as a deterrent for some stakeholders or organizations working towards establishing REDD+ projects. Corruption, a well-known and pervasive problem throughout Indonesia (Schütte 2012) and particularly the forestry sector (Dermawan et al. 2011; Transparency International 2011), also continues to be a major challenge for REDD+ project organizers. Each of these topics are discussed in further detail in the following sections.

4.4.1.1 Corruption and inability to enforce project boundaries

Corruption is broadly defined as the abuse of entrusted power by political leaders for private gain. Indonesia's former leader, Suharto, is thought to have been one of the most corrupt leader of all time (Transparency International 2004). The legacy of this corruption continued after the fall of Suharto as Indonesia decentralized, and to the present day (Olken 2005; Duncan 2007). Concerns about corruption and how it is impacting REDD+ projects were expressed by both foreign and Indonesian stakeholders operating at all scales of REDD+ implementation, and have also been documented in the literature (Dermawan et al. 2011). At one time the Ministry of Forestry was found to be the lowest ranked government ministry in Indonesia on an integrity survey done by the

Indonesian Corruption Eradication Commission (KPK) and was furthermore found responsible for inaccurately mapping forest cover, land use, concessions and unfairly allocating land rights (HRW 2013). While such high level corruption is problematic for forest management, corruption in the forestry sector also occurs at the local level (Prasetyia 2012; Kuncoro et al. 2013) and can be problematic for REDD+ projects.

Stakeholders from this research operating at all scales reported frustration with corruption in Indonesia. Concerns from stakeholders operating at the national or international levels expressed a sense of mistrust and concern for how corruption seems to be affecting forest management and facilitating high levels of deforestation. Stakeholders working at the local level reported more specific concerns about corruption resulting from hands on experiences with corruption that hindered progress on projects. Specific examples include different types of interactions with local authorities -- often stakeholders working at the local or project level reported instances where authorities expect bribes or payments in order to enforce project boundaries and stop encroachment. While some projects seem to have enjoyed the support of local officials, other stakeholders reported that at the district level they often cannot get approval for projects, even after a project has been approved by the central government. A number of stakeholders reported a lack of enforcement of current regulations, which can also lead to a sense of general frustration and fatigue with REDD+. One informant who works at both the international and project level, referring to a visit to one of the provinces where REDD+ is being implemented, put it like this: *“It was really staggering, the amount of, the complete lack of enforcement of any rules or regulations about destruction of [the forest] ... ”*. Respondent ID 10375

In addition to the frustration and doubt that corruption causes stakeholders, corruption has been reported in the literature (Galinato and Galinato 2013; Galinato and Galinato 2012) to lead to higher rates of deforestation in general, and based on the results of this research facilitated encroachment into protected areas. This is something that is evidenced by the same phenomena occurring across protected forest areas in Indonesia (Gaveau et al. 2013; Margono et al. 2012; Broich et al. 2011; Indonesia Ministry of Forestry 2014). Corruption as is being seen by many working on REDD+ in Indonesia interferes with stakeholders having sufficient authority and the ability to enforce project boundaries. Without proper governance over the REDD+ project territories, it makes it difficult to achieve goals for carbon sequestration and biodiversity preservation. Other stakeholders also reported that local authorities failed to respond to encroachment within project boundaries, widely reported as a problem in Indonesia's protected forest areas (Murdiyarso et al. 2011; Gaveau et al. 2013; Sloan et al. 2012). For some stakeholders, the idea of having to pay bribes in order to get local support was both expected and necessary. As one stakeholder working at the local level put it, "...to make it work we have to make tribute payments to the local authorities...we've got to find ways to get support from the local authorities." - Respondent ID10387. Some stakeholders, who may even have some level of support from local officials, report running into problems with specific local officials. One expressed the difficulties they had experienced while working at the local level, in multiple districts across Indonesia, like this, "[He] manipulates everything...once when we tried to arrange a meeting with different local [departments] he arranged it so that it was only his close friends that came to the meeting. It's the same in [the other district] that we work in." - Respondent ID 10388.

Others expressed concern about how local law enforcement failed to protect their rights. Sometimes local police and authorities are even allegedly involved in the encroachment activities. One stakeholder, a project organizer whose project faces agricultural encroachment, illegal logging, and intentionally set fires said this, *“The police won’t do anything, really they should be trying to enforce themselves...there was a road built through our concession two years ago, after our concession was approved, and it [gives access for] illegal logging. [The local authority] tells people he owns the place, and they pay him to work here. Now those illegal loggers want [us] to pay them to go elsewhere. His son is a policeman here. They know that it’s supposed to be our concession...If we want to stop them, where can we go?” Respondent ID 10390.*

Sometime encroachment is done by other entities, such as agricultural companies or smallholders, but without local governmental support there is very little that project organizers, or even local communities within those projects, can do about it. In other scenarios, sometimes outside entities encourage encroachment by local villagers, which can make it more difficult for project organizers to stop the encroachment – without local government support it is nearly impossible. One stakeholder said this, *“We have villagers planting palm oil inside our concession. The [palm oil company] pays them to plant it there.” – Respondent ID 10383.* Another project described smallholder palm oil within their REDD+ project that was increasing at an alarming rate, when the smallholders were confronted they claimed to have been sold permits for their plots of land from someone on another of Indonesia’s islands. Project organizers turned to local authorities for support, but were expected to make payments, which their international-aid-agency-funded budget did not allow for. Complaints of this kind were common. One stakeholder

involved in a REDD+ project and working at the local level said this, *“Illegal oil palm from [our REDD site] is sold to agents or a local mill, owned by the government of Indonesia.”* -- Respondent ID 10422. Many respondents expressed this kind of frustration at how little support they felt from the Indonesian authorities often because of connections between corrupt activities and different levels of government in Indonesia. Stakeholders experiences with corruption can make REDD+ project management challenging, as the extensive encroachment associated with it leads to forest cover and biodiversity loss. Corruption such as mentioned by our respondents can also lead to stakeholder fatigue and doubt, discussed further in section 4.3.

4.4.1.2 Complex and confusing regulations

Indonesian governance is known for being complex and characterized by sometimes confusing laws (G. F. Bell 2003; Bakker and Moniaga 2010), which extends to governance in the forestry sector (Indrarto et al. 2012; Galudra et al. 2011). Sometimes laws overlap, or contradict themselves (Beckert et al. 2014; McCarthy and Moeliono 2012), leading to a challenging context for REDD+ projects. Stakeholders working from within Indonesian institutions as well as foreign stakeholders expressed frustration with the complex situation surrounding forest governance. One informant working at the national level described it like this, *“It’s an interesting sector to be in. I think you could spend 10 years here and still not understand. And again, a lot of very experienced colleagues, who’ve worked all over the world, have said to me that they’ve never worked in a more complicated system than here.”* –Respondent ID 10369. Another foreign stakeholder, working at the national level expressed it like this, *“It just makes it really, really hard...just the whole regulatory process. When the Ministry of Forestry is in the process of [developing regulations] someone would object, but they hardly ever revoke [things] because it’s*

embarrassing, so then they leave it there. And if they want to come and regulate the topic, the same topic, or revise it...they really want to avoid retracting it, they just want to retract some pieces of it, and they'll add some pieces of it. So at some point, they had three non-aligned, sometimes contradictory regulations on REDD and they were in the process of developing a 4th one...so then they try to start over and try and fit it together, and you wind up with this impossible framework.” – Respondent ID 10371

Ultimately, these challenges may mean that some stakeholders from foreign agencies are unable or unwilling to continue efforts to support REDD+ and other similar projects in Indonesia. Many foreign stakeholders operating at the national or international level felt that they were unable to find pathways to move forward with projects in REDD+ as well as other aspects of the forestry sector, which in some cases lead to their withdrawal from the country or on REDD+ projects. One stakeholder we interviewed reported this kind of situation with a partner organization, “...I was working with someone from [an international] Development Agency, and she was in Indonesia specifically for the purpose of closing down all of [their country's] development activities in Indonesia. They are completely pulling out because they find it too difficult to work here and have any positive effect, and they think their dollars are much better used [elsewhere]. So they're taking all their money....and they're completely pulling out.”— Respondent ID 10377. While the complicated forestry context creates a challenge for actual implementation of forest conservation projects, it can also provide a daunting environment for stakeholder groups establishing and maintaining long term working relationships in the country. Furthermore, without sufficient understanding of the context in Indonesia, some foreign stakeholders may not be able or willing to persevere with projects -- another informant put it like this, “There's no kind of clear information pathway on any of this, so if you want to sit down

[to do] research on forestry licenses, you can't quite [go by] what's written down. You've got to meet the right people and do the kind of social appraisal of asking something and then asking them to introduce you to other people and then try and collate your information and get back to the truth. So it's a completely labor intensive process. I think there's a lot of donors that just won't have time or resources to do that. They don't want to have relationships that intensive." – Respondent ID 10376.

Stakeholders working within Indonesian institutions also expressed frustration with the overlapping governance and regulations. Governance in Indonesia often overlaps between different scales, particularly in a conflict of interest and control between the national government and the local governments (Stevens et al. 2014; Brockhaus et al. 2012). One stakeholder put it like this, *"Now there are too many regulations, too many institutions that are managing REDD+."* -- Respondent ID 10395. Throughout Indonesia overlapping authority among different agencies, or various scales of government, can also contribute to confusion and challenges for those working in the forestry sector (Indrarto et al. 2012; Bakker and Moniaga 2010; Resosudarmo 2004). Overlapping authority presents a challenge for forest governance in Indonesia, and this can create doubt and confusion among those involved in REDD+, something that was expressed by foreign and Indonesian informants alike. As one stakeholder put it, *"Coming in the Ministry of Forestry was the leader on REDD in Indonesia...but the problem is that it's hard to get [the Indonesian Government] to think about it differently...and then you'd be at the district level and they'd be like, 'We can't possibly be interested or responsible for everything within the district boundaries because the Ministry of Forestry controls all of that forest, so 70% of the land isn't really under our control.' But the fact is that if you*

talk to the Ministry of Forestry and look at the regulations, it actually largely is under the district's control. So those gray areas that people talk about today...that's how you know where you have a huge number of problems.” -- Respondent ID 10380.

The quote above also highlights a disconnect between what happens at the national level and the local level in Indonesia, something that is acknowledged by Indonesian and foreign stakeholders at both local and national levels. At one meeting among Indonesian government officials and foreign researchers, an Indonesian representative said this, *“The state wants to implement [this], but the district doesn't have the same awareness level”—Respondent ID 10402.* Another Indonesian stakeholder based at the national level said this, *“And as you probably know already, in Indonesia it's the Bupati [district government head] that basically make the decisions about land allocation. So they have a very important role in deforestation, they give the license.” -- Respondent ID 10404.* Sometimes those locally issued licenses contradict official land use categories designated by the Ministry of Environment and Forestry at the national level (Barr et al. 2006; Contreras-Hermosilla et al. 2005). A recent law, “Law Number 23 about Local Government,” UU/23/2014, intended to rectify some of the problems that come about as a result of extreme decentralization (Prasetyia 2012; Ewing-Chow and Losari 2015) attempts to shift authority from the districts to the provinces. While Indonesia has over 500 districts, it only has 34 provinces, so the new law has the potential to strengthen the connection between central and regional governments by shifting power from many district governments to provincial governments. However, this shift has not yet materialized.

The overlap in authority and confusing governance has been particularly

problematic in the way it manifests with licensing and tenure in Indonesia, as parcels of land may have conflicting licenses for different uses (Resosudarmo et al, 2011; Contreras-Hermosilla et al. 2005). Licenses are sometimes issued by local authorities, and may conflict with forest designation by the central government (Barr et al. 2006). Permits can also overlap with each other, after having been issued by either local or national level authorities (Steni and Hadad 2012). This can pose a problem when there is confusion or conflict over tenure in REDD+ project areas, or in areas that are designated as protected forest by the Indonesian government. Some members of forest communities involved in our fieldwork were not aware that there were palm oil concessions overlapping with their customary forest (*hutan adat*). Many community customary forests in Indonesia are vulnerable because of the challenges associated with establishing community forest rights. Despite a 2012 court ruling that for the first time established the right of communities to have tenure rights to their customary forests (Natahadibrata 2013), very few of claims of community forest rights have been established since then. Stakeholders from our research involved in such cases report the process to be long and arduous, with challenges arising from the complicated legal system in Indonesia and conflicting governance among national and local levels something also supported in the literature (Sahide et al. 2016).

The introduction of REDD+ and the attention it has brought to the forestry sector in Indonesia has increased awareness of some of these issues – in particular the fact that there is no single authority or database for land-use permits and different sectors have different maps (Sills et al. 2014). As a result, one solution was proposed in which a single database, or map, would be established which would sort out the conflicting licenses and

overlapping tenure throughout the country. However this project, called “One Map”, has not yet been completed, potentially as a result of the enormity of the task. One stakeholder who had been involved in development of the One Map project said this, “*We are engaging into an MoU with the governor of [the province] ...so the governor requested the companies there provide them with all of the licensing data, with all of the administration data, and also the data they already have for licenses. We gathered all of them...it was [very much] a lot because we received like ten boxes of documents each day, and it keeps on going and going and going. And that’s only from [three districts], not the whole [province]*” Respondent ID 10394. Indonesia has over 500 districts, which in consideration of the overwhelming documentation described here may partially explain why the One Map project has not yet materialized. The stakeholder then goes on to describe the problems with the documentation, which are indicative of the well documented tenure issues that exist throughout Indonesia (Contreras-Hermosilla et al. 2005; Sunderlin et al. 2014; Barkmann et al. 2010), “*...there are some licenses that are not there. It’s a really huge problem. We’ve asked the government, but they said that they don’t have them but then they will [speak to] the company. But the company said they don’t have them.*” Respondent ID 10394. Despite his role with the central Indonesian government, there does not seem to be an explanation for exactly where this problem arises, “*...I don’t know where is the problem. But as for me, I think the problem is [with] the government because, well, they issued licenses, they should have the documentations. So I don’t know what happened. I think, well, perhaps there are some errors or they just don’t remember to keep the data or maybe the data [doesn’t] really exist. If that happened, there may be some corruption issues there.*” Respondent ID 10394. This

scenario, while described by someone working for the central government, is indicative of what was reported by many stakeholders at both the national and local levels from both Indonesian and foreign agencies. Confusion and a lack of transparency, as seen in the example described above, are linked to higher levels of corruption (Kolstad and Wiig 2009). Complex and confusing governance thus not only frustrates efforts to implement REDD+ in Indonesia, but directly fuels the corruption, nepotism and collusions that are systemic amongst Indonesia's forest governance system.

Setting up a REDD+ project as an Ecosystem Restoration Concession may come with further complications. Stakeholders who have approached REDD+ as an ERC, have described difficulty in navigating the process of obtaining a license, and by March of 2012, 44 applications for ERC's had been received though only 3 had been approved (Walsh et al. 2012). One stakeholder involved at the project level described their experience working with the central Indonesian government as having included unwarranted bias from a government official that was against their project, *"At one point an individual in the government was against us, we kept getting money from investors...but then we couldn't get more because we never had any progress to show, there was no good news."*—Respondent ID 10382. Some already established ERC based REDD+ projects have reported that the process for obtaining an ERC as long and daunting. Rimba Makmur, a large project in Central Kalimantan reports registering for an ERC license in November 2008 and finally receiving it in December 2013. Their ERC license was finally granted after international attention was drawn to the projects' challenges when in November 2013 Harrison Ford visited the project to shoot his documentary, "Years of Living Dangerously". Even once the license was granted, the

ERC concession only covered half of the requested area (Indriatmoko, Atmadja, Utomo, et al. 2014). Rimba Raya, another project in Central Kalimantan also reports that the licensing process took 4 years, from 2009 to 2013, and in the end they were also only granted a partial license (Indriatmoko, Atmadja, Ekaputri, et al. 2014). As obtaining an ERC license will be essential for the development of many REDD+ projects, the difficulty in obtaining a license has the potential to greatly affect the overall progress of REDD+ in Indonesia.

4.4.1.3 Issues with funding

Difficulty finding sufficient funding was frequently reported as a major challenge towards project implementation. While the lack of funding is something that has been discussed in the literature (Phelps, Webb, and Koh 2011; Dixon and Challies 2015), some international and national level stakeholders seem unaware of the challenges that come with REDD+ funding. Part of the reason it is so important to discuss the financing options for REDD+ is because of the contrast between the perception of massive funding but a shortage of available finance on the ground. The experiences reported by many respondents from this research suggest that this knowledge about lack of funding is prevalent among many stakeholders working on REDD+ at the project or local level, and it undermines their confidence and investment in the program.

While no official statements have yet been issued by the government of Indonesia, the government of Norway reports that approximately 8% of the 1billionUSD that were promised to Indonesia have either been released or “committed” (Royal Norwegian Embassy in Jakarta 2016). Though it is not clear where exactly these funds have been allocated, funds are allocated so that they are distributed via one of three

channels -- bilateral cooperation, dedicated NGOs grants (NORAD 2016), and global initiatives (via multilateral agencies) (Personal communications with Norwegian Indonesian Embassy July 17, 2016). At the Conference of Parties 21 (COP 21) in 2015 the Governments of Germany, the United Kingdom, and Norway all promised “an aim to provide \$1 billion per year by 2020, or to provide over \$5 billion in the period 2015-2020, including a significant increase in pay for performance finance if countries demonstrate measured, reported and verified emission reductions” (Government of Norway, Government of the United Kingdom, and Government of Germany 2015). The Government of Norway has also stated that at least 80% of their initially promised \$1billion USD is being reserved for performance based results, none of which has yet been dispersed (Royal Norwegian Embassy in Jakarta 2016). Thus, despite widely reported, substantial funding for REDD+, many projects are lacking basic funds to support on-the-ground projects.

Many projects were initiated with the assumption that these funds, or the carbon markets would be easily accessible for project financing, yet that has not been the case for many REDD+ stakeholders. It may even be possible that the perceived projections of all this available funding has actually undermined REDD+ effectiveness by overselling the idea of available funding and encouraging some projects to be initiated without a solid plan for obtaining financing. For example, the UN Pilot Project in Sulawesi reported that lack of funding was one of the reasons the project failed after several years of preparatory activities (United Nations REDD Programme 2013). As one stakeholder put it, *“We must meet all the government requirements, but it’s very expensive. We can’t make any money to pay for other things, like getting rid of encroachers.”*--Respondent ID

10420. Another stakeholder put it like this, "*[REDD+] is not working here because people expect lots of money and when it runs out they leave.*" -- Respondent ID 10423.

Another put it like this, "*There's no money coming through to anyone. It was kind of the general complaint, it was like, great, we have all these meetings, but we're trying to make a living out here.*" Respondent ID 10386. So despite the great hope that promised funds have brought, funding has remained out of the grasp of many REDD+ stakeholders and projects.

From its inception, REDD+ has been envisioned as a market based mechanism (Holloway and Giandomenico 2009). Though early pilot projects and readiness efforts have largely been funded by donor grants (Streck 2012), the intention was that a carbon trading mechanism would sustain the long-term viability of projects and incentivize expansion. Despite these intentions, stakeholders from this research reported that the carbon market did not provide a viable funding option in many cases. Carbon markets, as explained by (Kollmuss et al 2008) function as such: The intention of carbon offsetting through carbon markets is to have high carbon emitters mitigate or offset their emissions by purchasing or supporting emissions reductions elsewhere. Carbon markets exist as both compliance and voluntary markets. In the compliance markets countries and companies must offset a pre-set amount of their carbon emissions through trading or purchasing of carbon credits. The amounts for emissions and credits are determined by institutions such as the European Union's Emissions Trading Scheme and regimes like the Kyoto Protocol. Voluntary markets function separately from compliance markets, and allow companies or individuals to voluntarily purchase carbon credits to offset their emissions.

Because of concerns about their ability to actually reduce emissions, many forest conservation activities including REDD+ have been excluded from some carbon market mechanisms including the compliance market (Carbon Market Watch 2016; Butler, Koh, and Ghazoul 2009). At Conference of the Parties 2015 (COP21) it was acknowledged that carbon markets are not sufficiently developed in order to support climate change mitigation efforts (Johannsdottir and McInerney 2016). As a result, many REDD+ stakeholders, – working on projects not already funded by aid agencies or NGOs – find that selling carbon emissions provides insufficient funds. One project organizer said that, *“One of toughest things is carbon credits, the market is still soft. We could have 2 million a year in carbon credits, [but we] can’t sell them all.”*--Respondent ID 10384. Another foreign respondent involved at the national level put it like this, *“ Over the last year, it’s really gotten questionable. I mean I’ve started asking some of the [big NGOs] what their policy is if nobody is buying these credits. Well, we haven’t really figured that out yet. So in a way, it’s a real tragedy because there’s a lot of people out there that have invested a lot of time and effort and money into producing REDD credits, and now the worry is nobody will buy [them]. Of course, there is still a voluntary market...but there’s not the huge increase in demand that everybody anticipated.”* Respondent ID 10366.

Some working at the local level felt that they just would not be able to get sufficient funding to maintain their project over the long term. One such individual operating at the local level said, *“We need more support, [people are] always thinking about the money. We need more cash from outside, from donors. There's not enough money to scale up.”*-- Respondent ID 10392. This may speak to the fact that the financial return involved in REDD+ may not be sufficient to effectively compete with other land

uses, such as palm oil (Butler et al 2009). Stakeholders are aware how this imbalance of economic incentives may impact REDD+, and it can also create doubts for long-term success. One stakeholder said this, *“The other issue is that REDD money is not unlimited. It's going to be a drop in the bucket compared to the revenue that palm oil, for example, brings in or pulp and paper. So how do you address the real drivers of deforestation? Like, how do you really do that? And how can you use REDD to really do that? I don't know.”*-Respondent ID 10379.

The inability of REDD+ to compete with activities such as mining and palm oil agriculture may continue to be problematic in the future for a number of reasons. For example, globally REDD+ has created new opportunities for securing local tenure rights (Larson et al. 2013). However, while securing community rights *can* lead to more successful forest management in some situations (Stevens et al. 2014), it may not in cases where other activities can offer communities more financial compensation for their community forest (Resosudarmo et al. 2014). The lack of sufficient funding can also impact stakeholder perceptions of REDD+ and belief in the possibilities for achieving successful outcomes, *“One of our economists went to Kalimantan last week for a trip, and he saw the scale of the coal mining and the scale of the money that is coming in formally and informally to the local district government. And his feedback to me was REDD's got a tough job to do here if it can even try and compete with the level of money that's flowing in. And he became a skeptic overnight.”* -- Respondent ID 10377. These kinds of negative statements were prevalent among stakeholders from all scales and stakeholder groups, as discussed in greater detail in section 4.3 below.

4.4.2 Clashing perspectives

Stakeholders reported varying perspectives about what exactly REDD+ is, how it should look, and be implemented. The diverse range of perspectives amongst stakeholders as to the purpose and mechanism of REDD+ has the potential to both facilitate and hinder efforts towards project success. On the one hand, as a possible strength of the program, it may allow for a diverse range of REDD+ projects to adopt to the complexity of Indonesia's regulatory system and forest context, leading to creative and innovative solutions appropriate for the local context. The lack of consensus could also result in substantial disparities between successful projects and less successful projects. Different perspectives can be related to varying aspects of REDD+: how successful stakeholders perceive projects to be; what major challenges are; and what the purpose or goals for a REDD+ demonstration activity might be. While some see REDD+ as a way to commodify forests, others see it as a way to achieve conservation objectives, and yet others still see it as a way to strengthen forest community rights. These varying perspectives may offer an opportunity for projects to develop that are able to successfully achieve outcomes within the complex Indonesian system. However, the variation between stakeholder perspectives could also exacerbate the disconnect that already exists in Indonesia between governance at the national and local scales.

A substantial disconnect exists between global policy and rhetoric, the central government and efforts at the local level. Despite a discourse of community-led, collaboratively managed projects, this reality has yet to manifest itself on the ground. Much REDD+ discourse – despite public consultations – is top-down and information exchange is weak among the national government, national civil society, and

transnational actors (Moeliono et al. 2014). One striking example of this from our fieldwork arose when stakeholders operating at the national level had perceptions about availability of funding that significantly differed from what stakeholders working at the project level experienced. One stakeholder working at the international scale and representing a foreign donor government said, *“So certainly, I think funding is not going to be the constraint, I think the constraint is going to be to identify good, strategic, important projects.”—Respondent ID10373*. As mentioned in the section above, this perspective differs greatly from the perspective of stakeholders on the ground. At the project level, stakeholder repeatedly noted the lack of funds. As one stakeholder involved at the project level said, *“...it’s hard to find funding.”—Respondent ID 10389*. And another put it like this, *“And it’s totally unclear what the finance is going to be.”—Respondent ID 10378*. When stakeholders working at the national and international level are not in touch with the real challenges for those working on REDD+ projects at the local level it may contribute to logistical problems for project implementation.

The differences in perspectives among stakeholders is not always problematic and can also mean that those involved in developing projects see REDD+ as an opportunity to achieve different, but related, goals—all of which may fall under the umbrella of REDD+. Today, many stakeholders seem to see REDD+ as a means of achieving certain goals – making money, conserving forest ecosystems, and strengthening community rights. When REDD+ was initially conceived of by the U.N., the primary goal was to make forests more valuable in our global economic system so that they could be conserved and treated as a commodity through valuation of the carbon they stored, thus helping to mitigate climate change while still promoting economic development

(Holloway and Giandomenico 2009). Some stakeholders still seem to view REDD+ in this way, *“But in the ideal, to tie [our project] into the whole REDD idea, [our project] is trying to conserve forests...which will keep the carbon in the forest...and contribute to mitigating climate change.”—Respondent ID10403*. Similarly, others may see REDD+ as a way to commodify forests and make a profit while achieving other REDD+ goals, essentially running the project as a business *“You need to treat it like a business. Figure out the end goal and carbon-credit sales first, then all the costs and fieldwork. [We] did the license and business planning first, including marketing, lots of marketing. For a business you have to spend money on that.”-- Respondent ID 10382*.

After its initial conception, it was acknowledged that there were other considerations, or co-benefits, such as strengthening forest community rights and biodiversity conservation that needed to be included in REDD+ (Holloway and Giandomenico 2009). Different actors have leveraged these components of REDD+ towards their area of interest – whether carbon sequestration, biodiversity conservation or community rights. Many NGOs and civil society organizations have seen REDD+ as an opportunity to achieve long held goals for conservation and capacity building among indigenous forest communities. As such, REDD+ is often viewed merely as a vehicle through which other objectives can be funded and implemented. While, such activities may align with broad objective of REDD+, there is little-to-no adoption by many REDD+ project organizers of the central mission of REDD+ as envisioned in international policy. Many NGO and civil society organizations expressed their view of REDD+ as a way to achieve goals for strengthening forest community rights and conservation outcomes. *“So what we did and what we are still doing until now is trying to*

do the right [thing] first, REDD+ later. We don't really think about REDD, actually. But since REDD is related to forest, then what we do is [figure out] how to protect the forest first and the rights of the indigenous peoples who own the forest.”—Respondent ID

10399, others described the purpose of REDD+ as being to preserve ecosystem services provided by forests and to change the current paradigm surrounding forest land use, “I think the aim of REDD, of course it is to reduce the deforestation and change the paradigm here... We recognize the very important ecological functions of forests when they are conserved as they are, [rather] than when we cut [them].”—Respondent ID 10401. These different perspectives can offer those undertaking REDD+ activities different avenues for creating REDD+ projects, and can be seen in the different ways that projects have developed in Indonesia. This kind of variation among projects allows stakeholders to navigate the challenging complexities of forest governance and land tenure in Indonesia.

4.4.3 Cultural barriers: Insufficient open discussion about problems with REDD+ and forest management in general

Many stakeholders expressed a feeling that there was a lack of openness and clarity in REDD+ interactions in Indonesia. Collaboration among stakeholder groups has been identified as an important component of long-term successful ecosystem and natural resource management schemes (Vacik et al. 2014; Blumenthal and Jannink 2016). While the inclusion and collaboration of stakeholders at multiple scales has been acknowledged in many REDD+ documents (Climate Investment Funds 2013; UN REDD Programme 2015), many of our respondents reported feelings of frustration at cultural disconnect and misunderstandings.

Indonesia has a complex and rich cultural context, reflected by the fact that over 700 languages are spoken there. While this cultural diversity has made Indonesia the diverse place that it is, it has also created a complicated context which some describe as chaotic (Parry 2007; Forrester 1999). This complexity means that sometimes foreign organizations and stakeholders working in Indonesia may find the Indonesian system difficult to navigate when working towards achieving goals for large scale projects, such as REDD+. Because of the diversity of cultures in Indonesia, even some Indonesian respondents from our research report finding the complexity of Indonesia difficult to navigate. Many foreign and Indonesian stakeholders reported feelings of frustration and sometimes even confusion when working on REDD+ efforts, particularly at the national or international level.

Many stakeholders seemed aware of how the complexity of the Indonesian context was impacting outcomes for REDD+. One stakeholder, described frustrations in regards to weak governance and the lack of reference levels, data on baseline forest cover in many areas, “*REDD cannot work here, we don't have the reference levels. And Indonesia is too diverse and vast. The national government cannot control the subnational, provincial or kabupaten [district].*”—Respondent ID 10367. Confusion can happen when well-meaning foreign donors or project organizers approach the situation with less knowledge about cultural context than may be necessary. As one stakeholder put it, “*You wind up with all these really strange situations where donors come in, and they talk to some government person who, you know, may or may not understand what they're saying; may or may not really be an appropriate decision maker for the topic, and then they're in a position to make a decision*”—Respondent ID 10372. Other stakeholders

felt that it was difficult to navigate the cultural context of Indonesia in a way that would allow them to be successful over the long term, *“Operating here as a civil society body is difficult, and the government has been known to kick out quite a lot of civil society [organizations] that they don’t agree with...I think you have to be brave to work here, and to set up a business is almost impossible.”—Respondent ID 10368.*

Other stakeholders felt that when there were issues that arose, it was difficult to address them directly and were unsure how to deal with problems in a culturally appropriate way. Some who had been working in the country for a long time had a better sense of how to approach issues, and one respondent working at the international level based in Jakarta put it like this, *“It’s difficult because you can never say anything directly...You never look somebody in the eye and say ‘You’re wrong.’ You say, ‘Perhaps we could all sit down with the numbers, and we’ll walk through how we did our calculation, and you can walk through how you did yours. We’ll see where we start to diverge and then we can talk about it.’ And that’s the only way we can do it. You have to get people they respect [in the discussions] because...if they don’t like the result, they just refuse to accept the facts. It’s just science...it’s like the temperature. The thermometer says it’s 70, you can’t say, ‘No, that’s wrong. It’s 40.’ It’s not subjective...[but], you’re going to see that kind of reaction”- Respondent ID 10381.* And another working at the national level, emphasizing the frustration felt as a result of the disconnect, said this about overcoming challenges for REDD+, *“Yeah, this is quite an interesting one, especially because of the forest sector and the Ministry of Forestry’s definition of degradation and deforestation differing from the rest of the universe and...they’re saying there is none. They’re saying they’re exponentially improving and*

everyone else is saying the opposite. And it's the same data, it's the definitions and what they're calling deforestation. So, getting those definitions in place like we agreed to is going to be a bit of a challenge, I think.”—Respondent ID 10370. Comments such as these were common among respondents, and are also connected to lack of buy-in and stakeholder fatigue – both are discussed in more detail in the following two sections.

4.4.4 Stakeholder fatigue -- stakeholders doubt the possibility for the success of REDD+ in the future

The sentiments of doubt, stakeholder fatigue, and lack of buy in presented in this and the following section are representative of the feelings of the majority of our respondents. Stakeholders from all the various groups and scales expressed some doubt and disenchantment with REDD+, and these were some of the most emphasized and salient themes presented by respondents. Disappointment with the achievements of REDD+ were recently expressed publicly by government officials from Norway (Parlina and Nicholas 2016). At the national level this stakeholder fatigue is often expressed as a doubt REDD+ would endure and be able to achieve success in the long run. This is how it was expressed by one informant, *“There are so many problems that we are dealing with to overcome these REDD+ issues like local conflicts, either vertical conflict or horizontal conflict, or law enforcement, the corruption, the licensing, there’s [so much].”*—Respondent ID 10396. While many of these feelings about REDD+ were often specific to the Indonesian context, but also extended to the global perspective, *“So I would say that my general perspective on this is all incredibly difficult work. So to not have made the progress that anyone hopes, or even 10%, is not surprising. And so, when I say we all have failed, it's not really a criticism...it's just that that's the way that it*

is....it's certainly an issue globally too.”—Respondent ID 10374. And also that globally successful forest management is a major challenge, but particularly so in the Indonesian context, “It's been really painful to watch actually, I feel really bad for [the Indonesian government]. You know, people underestimate how hard it is to do certain things well. And like with the US, has the US cracked any of this? Is our forest cover monitoring system good? No. Is our alignment of institutions that control forests good? No. Can we actually make a commitment to reduce forest loss? No. So the idea that Indonesia should be able to do any of those things, it's a little bit disingenuous. It's a ridiculously hard problem. Especially in a country like Indonesia, where it's so resource dependent and corrupt.” Respondent ID 10411.

At the community level stakeholder fatigue manifests as doubts that promises would be met. Free Prior and Informed Consent (FPIC) was developed as a way to make sure that communities were fairly and ethically being involved in the process (Colchester 2010). In some cases well-meaning stakeholders, some of whom may have been doing their best to offer communities FPIC, may have approached communities years ago. However, when licenses take many years to obtain, or financing turned out to be difficult to find, communities feel they have been made false promises and lose faith in the stakeholders that have approached them and in the associated processes, including REDD+.

Some stakeholders were even starting to express that their organizations were moving away from REDD+ even if they were still interested in achieving the outcomes. This can be described as doubt in the REDD+ label, and in some cases stakeholders have

disassociated their forest projects with REDD+ because of this sentiment. One respondent operating within the Indonesian government directly stated that they were not interested in being involved in REDD+, *“REDD now is forestry, but then the Ministry of Forestry says we don't want REDD. Because REDD is now being managed by [other agencies]. For a long time I've always been saying that we still have to have REDD. But, they don't want to use the term REDD. So they always say, 'We don't want REDD'.”- Respondent ID 10393.* Other stakeholders had doubt that REDD+ would be successful because of other similar programs that had taken place, and not achieved what they set out to do. *“We were in this situation where on the ground, where the Bupati [district head] is basically saying, 'I like your approach, but I don't want to get involved in carbon trading, I don't want to focus on carbon trading, I want to focus on sustainable forest management and community benefits, etc. If you can help develop a program for that without getting bogged down in carbon trading, that's good'. The reason being that he had been involved, he had sort of been suckered into thinking about the CDM [clean development mechanism] and that the CDM was going to deliver a lot of benefits because there's a big EU fund for it. And it basically never materialized”—Respondent ID 10374.*

Some stakeholders felt that although there was much attention given to REDD+ at the national level, this was not the case on the ground, *“There's projects...but really if you look at what's happening on the ground, it's not that much. Except for a few projects...but some of them are also making more noise than anything. There's not really that much action, and especially involving local governments.” -- Respondent ID 10367.* And another said this, *“REDD+ isn't happening yet...”—Respondent ID 10405.* Other

stakeholders felt that all of the attention to REDD+ at the National and provincial levels, combined with a lack of action at the project level was part of what caused stakeholder fatigue, *“I get a lot of impressions from people and it seems like Central Kalimantan has had so much focus on it that there is a bit of, a kind of REDD fatigue there, I think, and frustration with all the things that are happening.”* — Respondent ID 10370.

4.4.4.1 Lack of buy in

While related to stakeholder fatigue, comments about lack of buy-in were more about how certain stakeholders do not believe that REDD+ will work, or benefit them, and are thus disinterested in supporting projects and other efforts. Analysis of the political context of Indonesia has demonstrated that REDD+ lacks support at national and local government levels as well as among the public (Luttrell et al. 2014). Respondents expressed frustration at the lack of buy-in by government agencies at both the national and local levels, but also many other stakeholders expressed a lack of buy-in. The topic of buy-in was discussed by respondents in these two different capacities – the first being their own lack of buy-in, and the second being their perception of a lack of buy-in from other stakeholder groups. While these two aspects of buy-in were often mentioned separately, there is a relationship between the two. Often informants would explain their own doubts about REDD+ as being influenced by seeing a lack of buy-in from other stakeholder groups. This is characterized in the following quote, by a stakeholder, working at both the national and project levels, *“...[The Government of Indonesia is] very defensive about this deforestation issue, particularly because of palm oil...because it’s their number one export, and it’s the cause of all this deforestation. On the one hand, they make all these public announcements about climate change and da-di-da, and they*

support this and they support that. And then over here, it's one concession after another for conversion to oil, and then they don't do anything about all the small-scale conversion....".—Respondent ID 10419. Members of forest communities, extensively involved in some REDD+ projects also expressed doubts about the ultimate utility of REDD+, "All I think we can really hope for is ownership over our forest. These projects are only helping us a little." – Respondent ID 10416

Frequently, comments about buy-in and concerns about how much buy-in other stakeholder groups had were directed towards the Indonesian Government at both national and local scales. The concern about a lack of buy-in was voiced most frequently regarding local governments, as one stakeholder put it rather bluntly, "...*the buy-in from the government [in that district] is still pretty weak.*"—Respondent ID 10407. There is some evidence to support these sentiments in the literature reporting a lack of enforcement and support experienced by national parks and some REDD+ projects at the local level (Yuliani et al. 2010; WWF 2013). A variety of stakeholders felt that the plans for REDD+ in Indonesia had not included ways to create buy-in or incentives for local governments, and which ultimately impacted how much many local governments supported REDD+ projects. One national-level government official explained it like this, "*There is no reason for these subnational governments to buy in, there is no buy-in at all. Why should they be interested in REDD? What is it doing for them? Bupati [district heads] are only around for 5 years, they want some kind of reward that'll happen when they're there.*" – Respondent ID 10413

Some stakeholders that were involved in running REDD+ projects were not even certain that their own projects would be successful. Such doubt has the potential to undermine the longevity and commitment to achieving REDD+ outcomes. As one stakeholder put it, “*Not that there's any success stories. You know, I think the stuff we're doing [at our REDD+ project], you know we really don't have it figured out there.*”—Respondent ID 10380. Others felt that all of the problems compounded the fact that many stakeholders failed to see, or believe, how REDD+ could benefit them, “*There are so many issues that are going on here...we have to find what the source of the issues is first. Because if you talk about the challenges of REDD, well, I can say that maybe resistance from the general governments or resistance from perhaps the NGOs, or perhaps the indigenous people, the tribes. So those are the people that we have to convince that ‘This is for you.’*”—Respondent ID 10385. Getting support and buy-in for REDD+ at all scales will be necessary if REDD+ is to have any hope for success in the long run.

5. Conclusions

REDD+ is undergoing a crisis of confidence in Indonesia. Few stakeholders at local, regional, national and international levels have much faith that REDD+ will be successfully realized in Indonesia in the near future. Many respondents working directly on REDD+ felt there was a serious lack of pathways for moving forward and project implementation, something which likely added to delays in REDD+ development and may have exacerbated feelings of doubt. Clashing perspectives and cultural barriers were also problematic, particularly at the international and national level.

At all levels, there are frustrations with corruption, governance, land tenure, slow progress and bureaucracy. Furthermore, this research shows a wide-spread loss of faith in the central mission of REDD+. Most stakeholders no longer believe that the REDD+ mechanism can compete with alternative land uses and that REDD+ can be a successful mechanism using carbon markets to reduce emissions from deforestation and degradation. While some actors are turning their backs on the REDD+ mechanism all together, many actors are content to use REDD+, and the recognition and funds it makes available, to achieve other long-term goals such as biodiversity conservation and community rights – intended to be co-benefits, not the objectives of REDD as it is envisioned at an international level.

While much of the sentiment towards REDD+ expressed by stakeholders is negative, there were also positive aspects and opportunities for improvement that were expressed by respondents. While many stakeholders have doubts about the future of REDD+, many at least acknowledge that some good has come about as a result of REDD+ activities on the national level, as well as projects on the ground. Despite the evidence that REDD+ has not yet achieved the ambitious goals of reducing Indonesia's deforestation rate (WRI GFW 2016), some actions towards forest governance reform have resulted from the introduction of REDD+ and the international attention it has drawn to Indonesia's forests. These actions include the presidential moratorium on new licenses (Busch et al. 2015), discourse regarding Indonesia's sometimes problematic forest classifications (Enrici and Hubacek 2016), as well as continued international support for REDD+ efforts (Government of Norway, Government of the United Kingdom, and Government of Germany 2015).

One stakeholder framed the positive side of REDD+ as increased interaction among the Indonesian government and other stakeholder groups, *“But in terms of the REDD process itself...I think a lot of good things [are] happening when they engage various stakeholders. And this REDD process, I think it’s very special also to Indonesia because I think the REDD+ also gives the momentum for [the] Indonesian government to start recognizing the contribution from other stakeholders, not only from the government. For example, a good example is that now they have been actively involving the civil society, involving the private sectors, in, not only in the events, but also in the process of developing like strategies and other initiatives like OneMap, the multi-door approach, and things like that. So I think that’s quite positive. And also coordination among ministries is also as important. And I think that never happened before, I mean, not as significant as now, yeah? Because now with the REDD-plus momentum, we realize that without coordination, good coordination, among stakeholders, among ministries, or it will never happen.”*—Respondent ID 10396. Another similar perspective is that REDD+, although maybe not exactly being the program that the United Nations designed it to be, is a catalyst which will drive change and help encourage policy reform and better forest management, *“I really like the perspective, the idea that REDD is going to drive change.”* – Respondent ID 10499. Other stakeholders felt that by entering into projects for the long term, there was a possibility for positive change. As has been mentioned by many of the stakeholders interviewed for this study, working in the Indonesian context requires perseverance and understanding. One stakeholder put it like this, *“It’s almost a kind of a test of stamina here. A lot of donors have decided to withdraw because they’ve just had enough of the shenanigans, and for some reason, we’ve stayed. So it’s almost*

like we have a good relationship because we've been around the longest.”—Respondent ID 10376. If REDD+ is to succeed it will be important for NGOs and stakeholders to recognize both positive outcomes as well as shortcomings, and for stakeholders to remain committed and work towards their goals in REDD+, even in the face of challenges.

Chapter 6: Conclusion

It is important to note the broader global context and revisit the history of REDD+ in order to put the results of this research, and forest carbon in perspective with global environmental governance and forest degradation. As the realities of climate change became more widely recognized and discussed in the scientific and public discourse, the UNFCCC was established at the Rio Earth Summit in 1992. The Kyoto Protocol in 1997 saw many industrialized countries to commit to greenhouse gas reductions. Under the protocol, a carbon market was established in which these industrialized countries could purchase emissions reductions from less developed countries, in order to continue their own carbon emitting activities (Bumpus and Liverman 2010). Despite estimates of the contributions of deforestation to anthropogenic carbon emissions, around 25% during the 1990s (Houghton 2005), emissions reductions were not included as part of the initial carbon market mechanism under the Kyoto Protocol, though reforestation was included in the Clean Development Mechanism, and later in 2007 proposals were made to include REDD in the international climate regime at the thirteenth session of the Conference of Parties to the UNFCCC (COP-13) (Neeff and Ascui 2009). This inclusion of REDD+ was proposed as a way to address deforestation in developing countries as a major contributor of anthropogenic green house gases, and to help provide financial and policy support for such efforts. In subsequent years REDD+ has been included in UNFCCC considerations.

REDD+ is a payment for ecosystem service. The valuation of ecosystem services, or payment for ecosystem services (PES), is a mechanism by which financial compensation is provided for the protection of ecosystems and the invaluable services

that they provide to humanity. REDD+ has been described as the largest PES initiative to date (Bond 2009). PES schemes have gained popularity in recent years but have received some criticism regarding the uneven cost and benefit distribution among ecosystem managers and those benefiting from ecosystems (Hubacek et al. 2009) as well as for shifting the focus away from industries that are polluting (Mauerhofer, Hubacek, and Coleby 2013) something which is true for the REDD+ program design. However, like most PES schemes, the neoliberal roots of REDD+ can be seen through the way the program seeks to commodify forests by incorporating them into markets, and moreover does so on a global scale. The proposed mechanisms, such as REDD+, for reducing global anthropogenic carbon emissions have also been described by many (McElwee 2012; McAfee and Shapiro 2010; Lohmann 2009) as a neoliberal environmental governance scheme for wealthy core countries to continue to develop and grow economically while maintaining high levels of carbon emissions and pay other countries to reduce their emissions. Another way to describe it is as someone who is trying to lose weight by paying someone else to go on a diet (Checker 2009). Other concerns include the over-emphasis that REDD+ and other aspects of the international climate regime rely too heavily on market mechanisms; over-emphasize carbon, and undervalue other components of forest conservation such as biodiversity (despite the inclusion of co-benefits in many REDD+ plans); and the vulnerable populations at the local level are being marginalized rather than benefiting (Paladino and Fiske 2016).

Despite these concerns, high global rates of deforestation (Hansen et al. 2013), habitat loss (Hoekstra et al. 2005; Ferraro 2001), and species extinction (Ceballos et al. 2015; Whitmore et al. 1992; Pimm and Raven 2000) combined with a lack of practical

solutions has meant that such economic valuation of ecosystem services in order to provide an incentive to protect natural resources, rather than harvest them, has gained tremendous attention and popularity in recent decades (Gómez-Baggethun et al. 2010). The commodification of ecosystem services and marketization of the natural world offer hope to some for conservation efforts, but are cautioned to have potential negative impacts on stakeholders, ecosystems (Milder, Scherr, and Bracer 2010) and regional & national economies (Kronenberg and Hubacek 2013a; Kronenberg and Hubacek 2013b). Political ecology investigations of environmental management scenarios that bear similarities to REDD+ have demonstrated that the global discourse is disconnected from local level environmental dynamics and resource users (Agrawal and Ostrom 2001). In discourses surrounding large scale environmental management on issues of deforestation, international and national scale institutions are separate and distant from local level resource users and environmental dynamics (Adger et al. 2001). On the other hand, in some cases implementation processes for REDD+ can proceed in spite of multiple and separate discourses that do not converge (van der Hoff et al. 2015). There is even the potential for replacing the very value systems that have protected these forests in the past (Gómez-Baggethun et al. 2010). And in some instances of PES, larger entities, such as private corporations, have their goals met while indigenous communities are further marginalized (Grandia 2007; Igoe and Brockington 2007) and there is some evidence that this is also the case in carbon offset schemes (Yocum 2016; Checker 2009). Despite these and other legitimate concerns, PES for tropical forests, and REDD+ in particular, continue to develop at a rapid pace because of the lack of alternative solutions to deforestation and the problematic dynamic caused by the externalization of the natural

world from the global economy.

There are many aspects of REDD+ that fit in with what some call the neoliberalization of nature or neoliberal conservation. Though the exact nature of neoliberalism is debated there are some aspects that are prevalent in the literature. Heynen and Robbins discuss *privatization* – when natural resources change from public, commons, or state authority to private firms and individuals; *enclosure* – or the segregation of common resources and thus exclusion of communities to which they are linked; and *commodification* – the reduction of priceless ecosystems services and natural resources into economic commodities (Heynen and Robbins 2005 p.6). *Reregulation*, or the deconstruction of current laws and policies and creation of new regulations, is another common theme (Guthman 2007; Castree 2008b). All of these phenomena can be identified in aspects of REDD implementation – forests are becoming privatized, they are being given new boundaries and territories in some areas with possible exclusion of indigenous communities, and they are being commodified and reregulated. However, neoliberalization and its outcomes are not necessarily summarily negative; it is possible for there to be beneficial “environmental fixes” and outcomes from such activities (Castree 2008b; Castree 2008a). In theory, neoliberal conservation efforts promise much – bringing new resources to conservation, community involvement, simple solutions to complex problems, and even development in concert with conservation (Igoe and Brockington 2007; Grandia 2007), all of which can be considered anticipated elements of REDD+. Yet, unfortunately these promises are not always met when such conservation programs are implemented (Sunderland 2011; Igoe and Brockington 2007).

In Indonesia the implementation of these programs have been complicated and there is no clear answer on how they are, or are not, benefiting forests, biodiversity, or communities. The deforestation rate in Indonesia has continued to accelerate since REDD+ introduction (Margono et al. 2014; (WRI GFW) World Resources Institute Global Forest Watch 2016). Forest community involvement has remained complicated in many instances of REDD+ activities in Indonesia, as well as in the overall Indonesian context (De Royer et al. 2015). Furthermore, it has become apparent that the carbon market and REDD+ initiatives cannot compete with the finances of economic activities associated with deforestation (Butler, Koh, and Ghazoul 2009). Based on the research presented in this dissertation, it seems that while the criticisms of neoliberal conservation hold true -- while part of the problem is placing a price tag on forests (an invaluable part of earth's ecosystem), the price we have placed on them is far too low, and considerations for true inclusion of co-benefits remain undeveloped. However, at the moment there is no "Plan B" for how to approach the urgent problem of deforestation in tropical countries, and as of yet there is no other hope for forests –REDD+ efforts offer the most promising answer for attempting to slow down deforestation until an alternative and viable solution is proposed.

Much discussion surrounding the REDD program has been critical of the commodification of forest resources, weary of the effects these programs on local forest communities and concerned about the dynamics of the relationships among stakeholder groups (Büscher, Dressler, and Fletcher 2014; Paladino and Fiske 2016; Peet, Robbins, and Watts 2010). While some herald the commodification of the ecosystem services of invaluable tropical forests as a way to preserve them, there is concern that this regulation

of nature will also further marginalize indigenous local communities and have other unanticipated negative impacts (Brockington and Duffy 2010). While it is important to remember that both the United Nations and Indonesia have recognized the importance of stakeholder involvement in the process (REDD National Policy 2012) there are still concerns that certain stakeholder groups, particularly local forest communities, are, and will continue to be, marginalized (Fiske and Paladino 2016). The United Nations Declaration on the Rights of Indigenous Peoples' (UN DRIP) guidelines require the involvement of indigenous people in the synthesis of policies and plans for climate change mitigation (UN-REDD Programme Indonesia and Indonesia Ministry of Forestry 2011). However, in spite of similar assurances in other conservation initiatives, indigenous groups have been marginalized (Grandia 2007; Igoe and Brockington 2007). There are still many well-founded concerns about the long-term ramifications of REDD+ and how stakeholder groups, particularly forest communities, are being affected and whether or not there will truly be a benefit to forest ecosystems. The analysis of REDD+ implementation in Indonesia provided here offers some initial perspective on some of the challenges and opportunities that are playing out with the program's development. The results offer the opportunity to inform the ongoing development of REDD+ in Indonesia as well as REDD implementation in the dozens of other countries in which it is being undertaken.

The way that REDD+ appears in the international & national discourses and literature is very different from how it looks when talking to people who are deeply involved and see it happening on the ground. Comparing the regulatory and governance perspective of REDD+ with the practical experience of people at different scales of

implementation reveals very different implications for the program. The large sums of money that are being pledged for support of REDD+ indicates that there must still be some hope for REDD+ (Barrett and Goldstein 2016; Government of Norway and Government of Indonesia 2010). Yet the research presented in this dissertation demonstrates a crisis of confidence in REDD+ that is endemic to stakeholders throughout Indonesia, and likely elsewhere as well.

During the time I was conducting this research, I encountered many respondents, extensively involved in REDD+, that would question my motivation for studying the program, or even outright suggest that I change my dissertation topic to something else. These sentiments reflect the fact that many of those working on REDD+ view the future of the program as tenuous, at best. The Indonesian context can be incredibly challenging and chaotic, something which is widely acknowledged among those working in the country. While it can be difficult to address this directly in academic literature, it is necessary for understanding the real challenges for programs like REDD+ and successful forest governance. Conducting ethnographic research with stakeholders of REDD+ from all scales and a multitude of stakeholder groups has allowed me to do so here. Certainly REDD+ globally faces many challenges with funding, policy, and implementation logistics and the example of Indonesia, because of its extent of tropical forest and challenging governance context, is particularly pertinent. The results of this dissertation identify the specific areas for concern, which could be viewed as focal points for policy recommendations.

Chapter 2 identifies the specific components of the Indonesian context that have likely contributed to the increase in deforestation (Margono et al. 2014) that happened

after the initial introduction of REDD+. Complicated and weak governance are pervasive in the Indonesian context, particularly so for forestry (HRW 2013). Overlapping authority between the central government and local governments makes creating and enforcing effective regulations a major challenge (Sahide et al. 2016). Even the basic forest classification system has contradictions that have made the situation difficult to navigate. Corruption has been and remains rampant throughout Indonesia and its forestry sector (Dermawan et al. 2011; Butt 2011), adding to the difficulties presented by other aspects of the REDD+ context, such as lack of funding and buy-in. The Indonesian Government's REDD+ actions to date, particularly the moratorium, seem to indicate support of the program but do little to actually affect change.

Chapter 3 identifies some of the major components needed for evaluating Indonesian REDD+ projects and how they are achieving their goals. The importance of financial viability, community involvement, enforcement of project boundaries, and independent monitoring are each in turn described in relation to the Indonesian context. Part of the reason that financial viability is so important to stress is because of the disconnect between a perception of abundant funding, including the promised funding from Norway and other donors, and the lack of actual funding opportunities for projects. Community involvement has been agreed upon as an essential component of REDD+, though how to effectively engage communities remains uncertain in many situations (Bayrak and Marafa 2016). Enforcement of project boundaries in Indonesia is particularly difficult as weak governance and corruption prevent stakeholders from having dominion over their project areas. Monitoring is necessary to ensure that projects are doing what they say that they are, and assess how policy is affecting change on the

ground. Evaluating these components in light of the three case study sites helps to provide understanding on how REDD+ might or might not be achieving goals for carbon sequestration and biodiversity preservation. In the case of the three study sites, only Rimba Raya has produced verified results.

Chapter 4 uses the results of the overall ethnographic data collection to present a picture of stakeholders' views of REDD+ throughout Indonesia. Doubt about REDD+ and stakeholder fatigue are characteristic of the Indonesian forestry context. The pervasiveness of this lack of confidence has the potential to undermine the entire REDD+ program, if not addressed. Informants also reported a lack of pathways for implementation particularly because of corruption and how it affects governance capacity, complicated and confusing regulations, the lack of funding, and bureaucratic difficulties associated with obtaining licenses for ERCs. The difference in perspectives about REDD+ among stakeholders means that the program remains nebulous. Cultural differences among different stakeholder groups is a major factor in undermining stakeholder confidence in REDD+ in Indonesia.

What emerges from these chapters is a description of a massive effort towards reduction of deforestation and forest degradation that is struggling to gain traction. Because REDD+ cannot yet compete financially with other types of land uses (Butler, Koh, and Ghazoul 2009), it is at an inherent disadvantage. This disadvantage is likely exacerbated by corruption, considering how alternate land use interests can leverage a corrupt system to gain support from authorities. Despite these and the other challenges discussed here for REDD+, a recent study (Busch and Engelmann 2015) indicates that if implemented effectively REDD+ policies and carbon based mechanisms for forest

conservation do have a great potential for preventing emissions from deforestation and forest degradation. Furthermore, it is possible that some of the regulatory changes made by Indonesia's government will have positive impacts in the future – for example, while the moratorium on new forest licenses may not have immediately contributed to reduced deforestation rates, there is potential for it to have some positive impact (Busch et al. 2015). Thus, despite the challenges for REDD+, the program could facilitate positive change in the future. Whether or not it will be able to do so in Indonesia will depend on many of the factors discussed in these chapters.

The factors that will determine REDD+'s ability to have positive outcomes for forest cover include: governance (such as policy, government support, corruption, & tenure clarity); funding opportunities; collaboration with forest communities; utilization of available monitoring technology; creating logistical and bureaucratic pathways for implementation; stakeholder belief and buy-in; and bridging the gap between perceptions at high and lower scales of implementation. Governance reform in Indonesia is not likely to happen quickly, for reasons discussed elsewhere in this dissertation. However, it will be necessary for the Indonesian government to truly support the REDD+ effort, in reality as well as in rhetoric. This support from the government may help to increase the number of ERC licenses issued, and improve bureaucratic pathways for implementation. Unfortunately, recent events surrounding anti-corruption efforts (Vernaz 2015; Butt 2011) indicate that corruption is not likely to decline any time soon. Funding opportunities may increase as more countries commit to supporting REDD+, and if carbon markets are able to improve in coming years. Establishing baselines (Pelletier and Goetz 2015) in order to properly take advantage of monitoring capabilities (Goetz et al.

2015) will also increase accountability, as the data about forest cover gain and loss becomes widely available. Collaboration with forest communities will be essential as the program progresses, and there may be lessons to learn in this regard from projects such as Kapuas Hulu and Rimba Raya. Obtaining buy-in from communities and local governments will also be crucial to project success, and so considerations for how to do so must be included with project planning. Getting stakeholders to believe in REDD+ and continue to invest effort over time will be extremely difficult. The only way for this to happen may be for REDD+ itself to begin to demonstrate tangible improvements to forest cover in Indonesia.

Production forests in Indonesia are one of the places where forests are most vulnerable (Buergin 2016), making ERCs one of the areas where REDD+ could have the biggest impact. However, as demonstrated by the rejection of REDD+ by Harapan Rainforest, the two are not inherently linked. On the other hand, the potential for profit and attention brought about by REDD+ has attracted the involvement of Infinite Earth and the organizers of Rimba Makmur (another recently approved ERC for a large scale REDD+ project in Central Kalimantan) and ultimately resulted in conservation activities in what could otherwise have been converted palm oil fields. While projects like Kapuas Hulu may have been started without the REDD+ label, they have at least gained recognition because of their use of the REDD+ label. The challenges presented in this research indicate that much work and effort are needed to make REDD+ work. Below are some recommendations on how to overcome those challenges.

5.1 Recommendations

- *Guidelines or project level plans for REDD+ in Indonesia need to directly address the disconnect between the central and local governments.* The topic of weak, complicated, and overlapping governance was a point that reoccurred throughout this research. REDD+ projects, as exemplified by the case studies described in chapter 3, are often designed without taking into account how to engage local authorities. In the future, projects must account for addressing local governance in a direct manner, perhaps through the use of collaborative management techniques (Daniels and Walker 2001) in order to secure local buy-in and support.
- *Indonesia needs to address the lack of clarity in regulations and policies.* Confusing and conflicting policies are characteristic of Indonesian governance, something reported by our stakeholders and the literature (Ewing-Chow and Losari 2015; Galudra et al. 2011; Indrarto et al. 2012). While a complicated problem, this is an issue that if addressed, could greatly improve forest conservation efforts in Indonesia.
- *The One Map effort must be completed.* As discussed in Chapter 4, a definitive map of forest licenses and tenure throughout Indonesia is desperately needed. While a complicated and daunting effort, it will be necessary for securing community rights and other efforts like the Kapuas Hulu project.
- *More sanctions are needed, as well as an entity responsible for enforcing them.* As discussed in chapter 2, even when violations of forestry regulations are

recognized, there are often not sufficient sanctions in place. A system needs to be established for monitoring and prosecuting violators for encroachment and other forest related crimes.

- *REDD+ project organizers should prepare to find financing beyond the carbon market.* As the mechanism of carbon markets is not yet able to provide sufficient support for REDD+, project organizers will need to find funding elsewhere.
- *Better methodology and guidelines for community involvement and benefit distribution need to be laid out at a national level.* In many countries (Bayrak and Marafa 2016) including Indonesia community involvement in REDD+ has not been sufficient. Guidelines and methodology for community management could help this, but must also take into consideration stakeholder fatigue, as described in chapters 3 and 4, that can occur when implementation requires many years for projects to materialize.
- *The lack of ability to enforce project boundaries and maintain agency over a project must be addressed.* Excluding encroachers is essential to meeting project goals, yet is exceedingly difficult in the Indonesian context particularly. These difficulties are exacerbated because efforts by the government of Indonesia to curb corruption have failed (Vernaz 2015). Indonesia must continue to address these issues, and project organizers must be prepared to deal with them independently in the interim.
- *The crisis of confidence expressed by most stakeholders from this research should be addressed directly.* Behind closed doors the majority of respondents reject

REDD+ outright, but do not admit so publicly. Without getting the people working on REDD+ to believe that it has a chance for success, there cannot be much hope for the future of REDD+.

- *REDD+ has affected some positive changes, such as projects like Rimba Raya. It will be important to recognize the positive impacts of REDD+ in order to salvage its reputation. Positive efforts on the part of the Indonesian government should also be recognized.* Recognition of the positive could potentially improve confidence in REDD+ and encourage future efforts. There are also many lessons to be learned from positive and successful actions, and these can provide guidance for future efforts.
- *Increased monitoring and transparency of governance combined with inclusive decision making would greatly improve some aspects of the REDD+ context in Indonesia.* Sufficient transparency and accountability are lacking in many aspects of the Indonesian governance system. Increased transparency and monitoring of government agencies when combined with more inclusive decision making can lead to improvements specifically in decentralized governments (Suwarno et al. 2015).
- *Definitions for forest cover types (primary forest, secondary forests, etc.) need to be clarified along with understanding of verified forest cover change data.* Disagreements among ministries and between national and international data about forests and forest cover monitoring results have lead to further frustrations and confusion. Clarifying definitions of various types of forest would

help with this, and also potentially help with recognition of verified forest cover loss, issues discussed in chapters 2 and 4.

- *Monitoring technologies should be taken advantage of as much as possible.* As the availability of technology and data for monitoring of forest cover becomes more widely available, its use in monitoring Indonesian forest cover will improve efforts towards accountability. Furthermore it will help those engaged in REDD+ efforts understand how policy and other initiatives are affecting forest cover change.

5.2 Future Research

While this research presents a description of REDD+ from the viewpoint of stakeholders working on the program from international to the local scale, there is more work that could be done to illuminate the areas for creating successful REDD+ outcomes. Stakeholder perceptions and Indonesia's deforestation rate (WRI GFW 2016) indicate that the future of REDD+ is in doubt. In coming years it will be essential to inform policy decisions, REDD+ guidelines, and inform those involved in REDD+.

While Chapter 2 points out the specific policy and forest governance components that may be hindering REDD+ progress, there is not yet an obvious solution as to how this can be addressed. As was discussed in Chapter 4, the Indonesian context makes it particularly challenging to address governance issues. Future studies focused on the governance sector and how to rectify weak and complicated governance, with respect to the cultural complexities discussed in Chapter 4, could be particularly useful for moving forward with REDD+ in Indonesia.

Chapter 3 addresses the important factors of REDD+ projects that go into project development. As more projects are implemented on the ground, more case studies could help contribute to this topic, particularly in the realm of community involvement and effective governance. More data from successful REDD+ initiatives, that have been independently verified, such as Rimba Raya, could help other projects that are still under development.

Chapter 4 provides a description of the challenges for REDD+ from the perspective of stakeholders, but more research on stakeholder views could help identify pathways forward. One of the major challenges are cultural barriers, lack of confidence in REDD+ and insufficient buy-in. Further research on how to overcome cultural barriers, get buy-in, increase stakeholder confidence in REDD+ could be crucial to improving the program's outlook for long-term success.

Appendices

Appendix A

Sample of interview guideline from data collection

Questions included the following specific questions, and more nuanced questions based on each informant's responses:

Please describe your knowledge of REDD+ and the extent of your involvement of REDD+.

Can you describe any collaborations you have had with other individuals or groups towards the REDD+ effort?

Can you tell me more about your current perspective on REDD+ implementation in Indonesia? [Follow up: How has that perspective changed in the past year or two?]

What do you think REDD+ will look like in 5 years?

What are your hopes for the future of this project?

What concerns do you have in relation to this effort?

How has REDD+ impacted you [How has REDD+ impacted your community]? How has REDD+ impacted others you know?

What aspects of this experience have been positive? What aspects of this experience have been difficult or negative?

What do you perceive as being the major roadblocks to forest protection and REDD implementation in Indonesia?

Is there anything else that I didn't bring up that you feel is worth discussing?

Who else can you suggest that I might speak with?

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