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## Indonesia's Forest Management Units: Effective intermediaries in REDD + implementation?

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### ABSTRACT

Previous literature encouraged a hybrid institutional approach for REDD + implementation, where clear government policies help reconcile the rules, regulations and interests of external institutions with those of the communities involved. However, it is unclear *how* such an approach can be designed in the scale necessary to match local, national and international interests in protecting forests. For this reason, the functions of intermediaries deserve explicit recognition by key actors in shaping REDD + policy nationally and internationally. Indonesia is promoting the more localized Forest Management Unit (*Kesatuan Pengelolaan Hutan* or KPH) as a key element of forest governance reform for embracing REDD + and related initiatives. Using a case study from eastern Indonesia, we analyzed local factors driving deforestation and forest degradation. We then reviewed the work of the local KPH to examine the necessary roles of a potential REDD + intermediary. We argue that progress made by the local KPH in improving forest governance, including partnerships with local communities, is made possible by the KPH fulfilling the role of policy intermediary while taking on transformative roles reshaping internal and external relations. However, for the KPHs to fulfill their mandate as effective REDD + intermediaries, more concerted efforts from the central and provincial governments, as well as from international donors, are still needed. These include greater consistency in government policies and regulations, improved policy communications, and the commitment to strengthening the capacity of individual KPHs.

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### 1. Introduction

Under the United Nations Framework Convention on Climate Change (UNFCCC), there are two international carbon governance regimes: the 'Clean Development Mechanism' (CDM) and 'Reducing Emissions from Deforestation and Forest Degradation' (REDD +). The CDM was institutionalized first as a cost-effective mechanism for developed countries to offset greenhouse gas emission with low carbon technology transfer to developing countries that host CDM projects. However, incorporation of forestry in the climate change regime under the CDM has been largely viewed as unsuccessful due to financial and administrative constraints (Thomas et al., 2010; Lederer, 2011). The proposal to offer financial incentives for developing countries to reduce

emissions from deforestation (RED) was first introduced in international climate discussions in 2005. Forest degradation, a source of at least 20% of total tropical forest carbon emissions (Griscom et al., 2009), was formally recognized in 2007, adding the second D in REDD. The "plus" sign was added in 2009 to acknowledge "the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries" in reducing forest emissions (UNFCCC, 2010).

REDD + was conceived as a type of Payments for Ecosystem Services (PES) initiative. With a new, potentially massive source of funding through carbon trading, REDD + promised to offer a new approach for climate mitigation based on a national crediting scheme (Karsenty and Ongolo, 2012). REDD + sought to create a win-win-win solution for climate mitigation, ecosystem conservation and poverty alleviation (Pistorius, 2012). Although far from guaranteed, REDD + presents an opportunity to enhance a variety of ecosystem services on the global (e.g., carbon and biodiversity) and local (e.g., water) scale through results-based rewards (see, inter alia, UN-REDD Programme, 2013; Grainger et al., 2009; Harvey et al., 2010). With careful project design,

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REDD + is also viewed as an opportunity to better define property rights and improve forest governance, while diversifying and enhancing local livelihood options (Larson et al., 2013). A hybrid institutional approach, where clear government policies help reconcile the rules, regulations and interests of external institutions with those of the communities involved, was encouraged (De Koning et al., 2011; Peskett et al., 2011; Poffenberger, 2009), with an emphasis on bottom-up project design (Hajek et al., 2011). Many REDD + project proponents see working with communities as the key to success and are paying close attention to tenure security issues at the local level (Resosudarmo et al., 2013). However, these efforts are insufficient in addressing the challenges originating at the national level (Larson et al., 2013), and lack of coordination between national and local efforts can seriously jeopardize project legitimacy and implementation (Sunderlin et al., 2013).

Thus, the question is *how* to design a hybrid institutional approach at the scale necessary to match local, national and international interests in protecting forests. In this hybrid institutional approach, local institutions must function not only as policy intermediaries that implement mandated policies and regulations, but also PES intermediaries bridging the external interests of funders (buyers) of REDD + projects with the interests of local communities (providers). Previous studies on the roles of intermediaries in PES arrangements in developing countries have focused on how international or regional NGOs can help socially vulnerable groups in arrangements between local people and government, i.e., the “pro-poor” element in PES design (Davis et al., 2014). Intermediaries can help shape the nature and process of the resource transfer between providers and buyers in PES arrangements, although their specific roles have not yet been studied extensively (Muradian et al., 2010). More recently, several studies have examined social networks and power structures among key actors in REDD + policy and information networks (e.g., Brockhaus et al., 2014; Moeliono et al., 2014). However, limited attention has been given to the potential roles of intermediaries in REDD + project design and implementation. In fact, very few studies have analyzed project design prior to REDD + project implementation (Caplow et al., 2011), especially how to reconcile the rules, regulations and interests of external institutions with those of local communities (Mustalahti et al., 2012).

In this paper, we focus on the role of local institutions in REDD + implementation using one of Indonesia’s Forest Management Units in eastern Indonesia as an example. First, we describe the conceptual framework used to examine the roles of a potential intermediary in the context of a REDD + project. Next, we analyze local factors driving deforestation and forest degradation and review the work of the local Forest Management Unit in addressing those factors. We conclude by discussing the necessary roles of local institutions in effectively functioning as REDD + intermediaries, and the necessary investments for building and institutionalizing such intermediaries at the national scale.

## 2. Conceptual framework to examine the roles of an intermediary in REDD + project design

REDD + as a PES scheme implies a voluntary transaction in which a well-defined ecosystem service (ES), or a form of land use likely to secure that service, is bought/sold by at least one ES buyer and one ES provider (seller), if and only if the provider continues to supply that service (conditionality) (Wunder, 2005). PES schemes, in their purest form, are more the exception than the rule in actual ecosystem service trading (Muradian et al., 2010; Noordwijk and Leimona, 2010; Pirard, 2012; Wunder et al., 2008). Very few existing programs actually require direct measurements of resulting ecosystem services due to the technical and practical difficulties of establishing conditionality (Wunder et al., 2008). REDD + projects in developing countries have the added difficulty of identifying the ES providers in settings with unclear property rights and tenure security. This is one of the reasons why most of the current REDD + projects are considered as fund-based capacity building or demonstration activities not required to demonstrate emission

reduction results (Agrawal et al., 2011). However, carbon investors are ultimately the primary source of *new* funding for climate mitigation through REDD +. They cannot be motivated without a credible and reliable mechanism to establish conditionality on their investment. Wunder (2015) argued that PES arrangements without conditionality would be hard to distinguish from more generic policy inducements. He proposed a new definition: a voluntary transaction, often facilitated by intermediaries between service providers and users, for off-site benefits, with conditionality being the single defining feature of the term (Wunder, 2015).

Previous studies have warned that PES projects can exacerbate internal social problems of communities (e.g. elite capture of benefits) if they fail to recognize complex and diverse social contexts and ignore equity issues (Blom et al., 2011; Brown et al., 2008; Wunder et al., 2008). Increasingly, international discussions are focusing on establishing “safeguards” around REDD + projects to improve local forest governance, protect socially vulnerable populations, and enhance environmental benefits (Arhin, 2011). Brockhaus et al. (2014) found that the coalitions promoting political changes in six REDD + countries are focused on REDD + safeguards and environmental justice issues. However, they also found that the coalitions resisting any substantial reform have more political power, especially in Indonesia, where efforts for significant land tenure reform continue to provoke strong resistance (Indrarto et al., 2012).

In the absence of substantial national policy reform, is it still possible to develop the hybrid institutional approach that is necessary to match local, national and international interests in protecting forests? Although not a panacea, systematically establishing and cultivating REDD + intermediaries at the local level may be a politically attainable solution. Intermediaries are known to play a variety of critical roles in establishing and operating PES arrangements (Davis et al., 2014; Leimona et al., 2013; Pham et al., 2010). Government agencies, non-governmental organizations (NGOs), international agencies, local organizations and professional consulting firms may serve as intermediaries (Pham et al., 2010). They are defined more by the characteristics of their work rather than the type of organization (Moss, 2009). They often organize and train local providers (Corbera et al., 2007), connect them to external buyers (Skutsch et al., 2009), facilitate monitoring and reporting of ES in exchange for payments (Corbera et al., 2009), and also function as mediators to resolve local conflicts and improve benefit sharing within communities (Pham et al., 2010). While improving governance and promoting innovation and learning, effective intermediaries can also transform working relationships through networking, aligning, and translating activities (Moss et al., 2009). In other words, intermediaries can bring together local actors to develop shared goals, align or realign the relations within and between different groups under collective purposes, and translate the shared goals into different agendas at different scales.

Fig. 1 presents a simplified model of these roles and relationships within a REDD + project. In reality, there are likely many different intermediaries working together or in competition in all stages of REDD + project development and transaction (e.g. international and local NGOs as well as government agencies working together or competing). Intermediaries’ effectiveness hinges on their ability to organize local ES providers under common goals,<sup>1</sup> align/realign the relations of different groups, and translate their needs into the agenda of external institutions under the institutional and regulatory framework.

There are a range of intermediaries operating in Indonesia for community-based conservation through REDD + and other PES-type

<sup>1</sup> The importance of developing common goals was one of the key lessons learned from Rewarding Upland Poor for the Environmental Services they provide (RUPES) program. RUPES is an international funded action research program (18 sites throughout Asia) carried out by the World Agroforestry Center since 2002. “Voluntary, realistic, and conditional” agreements with local communities was recommended for setting common goals. (Leimona et al., 2013)

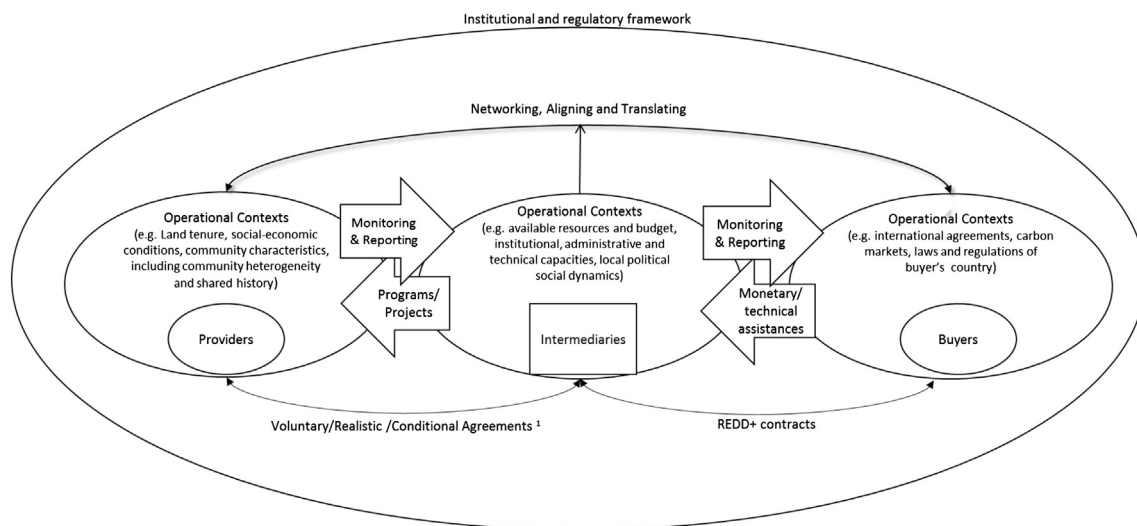


Fig. 1. Intermediaries in REDD + project development and implementation.

projects, including international and local NGOs, government agencies, and community organizations, as well as some conservation-oriented private sector organizations (e.g., PT Rimba Raya, PT Rimba Makmur Utama (Kaye, 2012)). Indonesia is promoting the more localized Forest Management Unit (*Kesatuan Pengelolaan Hutan* or KPH) as a key element of forest governance reform for embracing REDD + and related initiatives (Bae et al., 2014a). In this study, we have focused on the potential intermediary role of the KPH, given the emerging prominence of the KPH system in REDD +-related policy discussions in Indonesia.

The KPH system was initially conceived as a way to improve on-site forest management, while forest administration (i.e., setting objectives and relevant policies) is the responsibility of Ministry of Forestry (MoF, now reorganized as the Ministry of Environment and Forestry) and other agencies at different levels of government (Kartodihardjo et al., 2011). The main tasks of the KPHs include establishing the unit boundary, conducting forest inventory, developing short- and long-term forest management plans, and communicating with local communities and indigenous peoples (Republic of Indonesia, ROI, 2007, 2009). Other tasks include various forest management activities at site level and implementation of national, provincial and district forest policies (Kartodihardjo et al., 2011). Although the central government has created the KPH system, the jurisdiction over its operation is vested with the provincial government where the KPH is located (for an excellent overview of Indonesia's highly complex land use administration structure, see Sahide and Giessen, 2015). Thus, individual KPHs can be viewed as context-embedded policy intermediaries. Policy implementation is a process where individual intermediaries have to make sense of policies and regulations from different levels of governments, manage ambiguity, negotiate, bargain and exercise discretion to implement them in local contexts (Hamann and Lane, 2004<sup>2</sup>). However, progress in REDD + ultimately depends on "site-specific action across a series of sites" for building realistic expectation on what can be achieved at what cost (Davies, 2015). As part of their on-site forest management, KPHs can engage in developing and managing forestry businesses and investment for forest utilization, which include not only collecting and selling timber and non-timber forest products but also ecosystem services utilization (Kartodihardjo et al., 2011). The KPH system is being touted as the "entry point" of forest investment planning, including REDD + projects (Indonesian REDD + Task Force, 2012; World Bank,

2011). Thus, individual KPHs are expected to function also as PES intermediaries for REDD + projects working directly with international project developers (for example, the KPH in Berau Regency, East Kalimantan, works directly with the Nature Conservancy). The hope is that individual projects designed within local contexts through the KPH system can be coordinated across levels of governments for a national crediting scheme.

### 3. Data and methods

International attention on forest conservation in Indonesia has been more focused on the western part of the country, particularly the islands of Kalimantan and Sumatra, and relatively little attention has been paid to eastern Indonesia (CISRO, 2011, Russell-Smith et al., 2007). The KPH RB (*Kesatuan Pengelolaan Hutan Rinjani Barat* or West Rinjani Forest Management Unit) is located in western and northern Lombok, one of the two main islands in the province of West Nusa Tenggara (*Nusa Tenggara Barat*, or NTB) (Fig. 2). NTB province is not considered a major forest production area, as forestry is a relatively small contributor to the overall economy (0.07% of GDP) (BPS, 2012). Ironically, the lack of large commercial interests may have been an important factor in provincial and local government support for the centrally created management structure of the KPH system. Although the KPH RB is relatively small (managing about 41,000 ha), with modest resources of 31 staff (Ministry of Forestry, MoF, 2012), it has received national recognition, largely due to the leadership of the director, who also serves as the current coordinator of the National Association of KPHs.

According to a recent analysis of Landsat images, the forested area of Lombok has decreased 28.6% from 1990 to 2010 (Bae et al., 2014b). By comparison, Indonesia's national average is 20.3% during the same period (Food and Agricultural Organization, FAO, 2010). The forests surrounding the Rinjani volcano complex represent an important watershed, providing municipal water for the city of Mataram, and irrigation for the major rice production regions throughout Lombok.

Among the 38 administrative villages around the KPH RB, we selected 14 study sites and conducted focus group discussions (FGD) and in-person interviews of stakeholders (January–June 2013). Villages were chosen in consultation with the KPH RB for representation and diversity, based on their proximity to forests with different designated functions (Production Forest, Protected Forest), and forest governance status (e.g., Community Forest, Industrial Forest Estate, Customary Forest, and those under KPH management). FGD is a qualitative research

<sup>2</sup> Hamann and Lane (2004)'s study examined the intertwined process of education policy implementation.

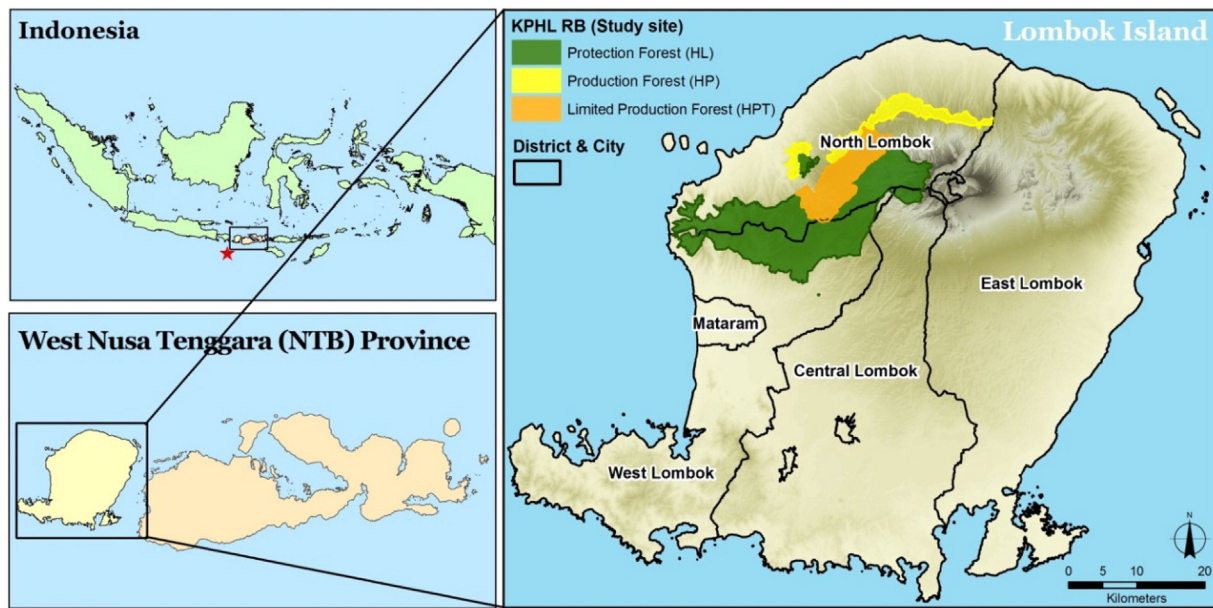


Fig. 2. Map of West Nusa Tenggara Province and the KPH RB. (Source: Korea Forest Research Institute).

method used to engage a group of people from similar backgrounds in open conversations to gain insights into a range of opinions and ideas (Bloor et al., 2001). During our FGDs, trained facilitators guided discussions among participants through the construction of shared village histories and participatory village mapping to estimate trend changes in terms of energy use, forest resources, livelihoods, consumption patterns, access to education and electricity, and to gauge community perceptions of livelihood needs and property rights. Each of the FGDs was attended by at least 25 participants, and we sought balanced representation in terms of age, livelihood activities and income levels, and local/indigenous people and migrants.<sup>3</sup>

After analyzing the data, we held a two-day workshop for community members (attended by at least 40 participants from local communities) and a one-day workshop for key stakeholders (attended by more than 30 representatives from NGOs, universities, and from provincial and local government agencies), to gain feedback on our preliminary analysis of the social-economic data and potential REDD + project activities (March 2014). We also conducted a series of in-depth interviews with key informants from the KPH RB, provincial and local government forest agencies as well as international and local NGOs, to better understand the varied contexts and types of activities of local intermediary organizations.

## 4. Results and discussion

### 4.1. Factors driving deforestation and forest degradation

Legally, jurisdiction over forests and land is regarded as clear and definitive: land within the forest area is under the authority of the Indonesian government, and no individual can claim ownership or change the status of forest ownership by the State (Republic of Indonesia, ROI, 1960). Our FGDs and interviews showed that de facto property rights are very complicated and local knowledge about government laws and policies related to forest administration and management is often quite limited. We found that people occupying forest areas

<sup>3</sup> We acknowledge that most of the FGD participants were men, and we did not conduct separate FGDs for women. This would limit our insights into different gender perspectives of forest uses. We focused our discussion here on forest uses at the household level.

still regard the forest as government land. However, the perception of land tenure security clearly affects encroachment into forest areas. In those villages close to Production Forest, FGD participants continue to use the Dutch term, “GG” – or *Gouvernement Grand*. They believe that the status of the land can be changed through continued settlement and cultivation, to the point of securing a legal claim and certificate or deed.<sup>4</sup> When the designated forest concessionaire withdrew in 2000, FGD participants said they felt justified in occupying the abandoned forest area and expected the government to eventually issue tax certifications (*Surat Pemberitahuan Pajak Tanah*, or SPPT), the first step toward land transfer, as full legal ownership is predicated on the issuance of this tax certification. More open and acute conflicts occurred in locations where occupation of the forest area has included the establishment of more permanent settlements, including homes, mosques and even hotel accommodations. In these locations, the majority of those occupying the forest originated from other parts of Lombok, and reported to have regarded the forest area as GG land, available for occupation and settlement. Their goal was to obtain certification and ownership, and they organized themselves into advocacy groups, often with NGO assistance. The government agencies generally avoided these areas and did not undertake project activities in these villages.

FGD participants in other villages reported that community occupation of forest areas occurred with the simple intention of fulfilling basic livelihood needs and fear of an uncertain future. The political turmoil following the fall of Suharto's New Order regime in 1998 led to an abrupt interruption of central government control, creating a great deal of ambiguity. Even in relatively isolated communities where local people have traditionally managed portions of the forest as customary forests, massive encroachment occurred during this time. As one participant noted during a FGD, “We felt that if we didn't cut the trees then, someone else would...”, a common refrain and phenomena reflected throughout Indonesia at the time (e.g., Resosudarmo, 2004). In these cases, individuals recognized that the land they occupied was within designated forest areas, and they subsequently accepted a range of government management directives and activities (primarily reforestation

<sup>4</sup> Historically, the perception of GG land was that it was available to individuals as long as they cultivated the land productively, however, ownership status could only be changed by government decree (Republic of Indonesia, ROI, 1960).

projects). People who participated in these forest management projects formed farmers' working groups (*kelompok tani*), both for the benefits of cooperation, and to improve their bargaining position with the government or other outside entities.

Rapid population growth and limited economic opportunities are other factors driving deforestation and forest degradation in the area. Lombok is one of the most densely populated places in Indonesia (683 persons/km<sup>2</sup>, compared to the national average of 129 persons/km<sup>2</sup>, BPS, 2012). Based on the 2010 Population Census (BPS, 2012), 70% of the population of NTB resides in Lombok, although the island only constitutes a quarter of the total land area of the province. Economic opportunities are limited to agriculture (23% of GDP and 47% of employment) and the mining and quarrying sector (27% of GDP and 3% employment) (BPS, 2012). NTB provincial statistics show that the province ranked the second poorest among the 33 provinces in Indonesia, based on the Human Development Index (HDI), a measurement that combines average achievement of life expectancy, education level, and per capita income. The latest figures (2011) show that the districts in the KPH RB have the lowest HDI in NTB (North Lombok = 60.93, West Lombok = 62.50, NTB = 66.23) (BPS, 2012). With limited arable land and development opportunity, the increase in population has intensified pressure on forests to meet the growing demand for food and fuel.

Infrastructure is a critical factor in supporting economic development, but it has the unintended consequence of accelerating deforestation and forest degradation. Improved accessibility to better roads and markets facilitates the production, transport, and trade of a variety of forest products. Timber markets for furniture making and home construction materials are found in the capital city of Mataram, as are fuelwood markets for urban consumers, especially for special occasions and religious holidays (Dinas Kehutanan Provinsi NTB, 2012). The FGDs in communities with access to major roads and increased population revealed that the use of new low-cost and efficient equipment (i.e., chainsaws, mobile sawmills) has expanded the range of timber harvesting and processing. Several of these local sawmills have secured official temporary work-permits issued by local government agencies, although no permanent permitted enterprises were found within the study area. Illegal logging occurs widely throughout the KPH RB (KPH RB, 2012), and it has increased with access to advanced wood harvesting technology (particularly the use of chainsaws), and with improved roads and transportation. Commercialized and well-organized illegal logging to supply fuelwood for tobacco curing is also prevalent, especially in North Lombok (Agusdin, 2012). Among 14 villages, three villages reported fuelwood sale as one of their major income sources during FGDs. One village reported 5–15 truckloads (1 truck ≈ 5240 kg) of sales per day during the tobacco-curing season. In addition, about 1 to 2 truckloads of fuelwood are sold every weekend throughout the year to be used for weddings, funerals, and other special occasions. Another study in the area showed that fuelwood trade also affects the overall fuelwood consumption in forest margin communities (Lee et al., 2015).

FGD participants also noted several institutional factors as the primary reasons for the extensive forest loss and conversion that has taken place in Lombok and around the KPH RB. Specific examples noted include government permitted forest clearing by forest concessions (without requiring reforestation), ineffective forest management institutions, inconsistent (and sometimes contradictory) government programs, and weak law enforcement. Overall, limited forest management capacity, both institutionally and in terms of human resources, resulted in a lack of clarity on forest boundaries, inconsistency in the permitting process, lack of transparency and accountability, and contradictory authority between local, provincial and national government units, all of which led to extensive land use conflicts, both within and between communities. Forestry-related offenses committed by various parties within the forest, such as illegal logging, unauthorized clearing of forest areas for agriculture, setting of forest fires, illegal exploitation and transport of forest products, and illegal use of chain saws and other equipment, have all continued over the past 20 years (1990–

2010). The legal framework for forest management is undermined by the inability to enforce sanctions and take legal actions against law-breakers. One indication of the weakness of the system can be seen in the limited number of convictions for forestry-related offenses. In 2002, for example, only 16 cases out of 158 accusations resulted in actual sentencing, and numbers of both accused and sentenced decreased continuously to the point where only 3 individuals were sentenced out of 15 accused in 2011 (Dinas Kehutanan Provinsi NTB, 2012). Many of our discussions and interviews with stakeholders reinforced the lack of public confidence and a general sense of neglect of forest management by government agencies. The majority of participants clearly believe the government is incapable of effectively prosecuting wrong doers, which sends a message of tacit acceptance of these illegal activities. These attitudes have further contributed to the deforestation and forest degradation that has occurred in the KPH RB.

#### 4.2. Perceived solutions to reduce deforestation and forest degradation

Following preliminary analysis, we presented our findings and solicited input from community members and key stakeholders on a range of potential strategies for REDD + investment. First, we asked about the types of activities that would reduce the rate of deforestation and forest degradation in the area, and then asked participants to rate each alternative in terms of implementation cost, performance risk, demonstrable outcomes, and impacts. Understandably, participants from local communities rated activities to develop local economies as their most preferred solutions. These included increasing local capacity to produce and process a variety of non-timber forest products, support for marketing regional specialty products, and ensuring equitable issuance and protection of timber harvesting permits to meet community needs. Social safety net programs, including improved access to quality health care and education of women, were also advocated to help reduce population growth, and, in turn, poverty and forest dependency. Other recommendations included support for small business development (through micro-finance programs and agricultural cooperatives), improved access to formal and informal education and job training, and improved coordination across government programs.

Community members also identified eroding social and cultural cohesiveness as a reason for deforestation and forest degradation in the area. Lombok society remains strongly traditional, with deeply held cultural values and the continued active role of local institutions. Customary and community-based regulations (or *awiq-awiq*) continue to be an important aspect of social life. While largely an oral tradition, these institutions and regulations continue to bind local communities' structures and traditions. Revitalizing and institutionalizing the *awiq-awiq* are viewed as important aspects of the overall solution to deforestation and forest degradation.

In short, reversing the trend of deforestation and forest degradation requires a range of investment strategies for addressing the underlying drivers. However, the main problem with the solutions presented by local stakeholders is that none of them are readily or directly linked to forest carbon emission reduction. A REDD + project, as a climate mitigation effort, cannot be initiated without clear expectations of carbon emission reduction within a specified project period.

#### 4.3. Progress so far with the KPH RB as an emerging intermediary

One of the most difficult barriers for bringing local actors under the common goal of improved forest management across Indonesia is land use conflict (Resosudarmo et al., 2013). The primary strategy of the KPH RB for resolving land use conflicts is spatial planning, i.e., dividing the community use zone from the protected core, and "assuring de facto usufruct rights"<sup>5</sup> of the communities within this designated area.

<sup>5</sup> "Assuring de facto usufruct rights" is the term we adopted from the key lessons learned from the RUPES projects (Leimona et al., 2013).

As a government agency, the KPH system has the advantage of holding legal authority over the land, at least those lands without previous claims or concessions. There are several legal mechanisms that communities can use to gain recognition for their usufruct rights from the government (Sahide and Giessen, 2015). Among these, the mechanisms that can be applied to the KPH RB area are: Community Forests (*Hutan Kemasyarakatan*, under MoF Regulation P.37/Menhut-II/2007), Village Forests (*Hutan Desa* under MoF Regulation P.49 of 2008 and MoF Regulation 53 of 2011) and Community Partnerships (*Kemitraan Kehutanan* under MoF Regulation p. 39 of 2013) in the designated Forest Area for Special Purpose (*Wilayah tertentu* under Government Regulation No. 6 of 2007 and MoF Regulation p. 47 of 2013). Although detailed regulations for Community and Village Forests' arrangements were created first, these arrangements require complicated and cumbersome procedures of proposal verification, site designation, and approval. The procedures involve both local and central government agencies, which can take years (Intarini et al., 2015). Although four communities in the KPH RB gained recognition as Community Forests (KPH RB, 2012), the process required intense facilitation by several local and international NGOs, and by local government agencies. Detailed regulations for community partnerships and Forest Area for Special Purpose for community uses were not completed until 2013 (Republic of Indonesia, ROI, 2013), but the process is now much more streamlined. Under this approach, KPHs can work with communities to create flexible arrangements that meet community needs for managing forests. They can also share the benefits of economic activities (Jang and Bae, 2014). KPHs can help bring together local actors in those communities lacking the capacity and resources to pursue other forest management arrangements, and help them organize community groups to develop partnership agreements. The KPH RB is working on designating Forest Area for Special Purpose and, with local NGOs, developing Community Partnership agreements with each community neighboring the KPH RB in order to allocate and assure their usufruct rights to 25-ha blocks within the designated area (Madani Mukarom, personal communication March 17, 2014).

Along with these community partnership agreements, the KPH RB is implementing a local forest stewardship program<sup>6</sup> to support recognition of existing de facto usufruct rights in each community. The KPH RB has encouraged communities to nominate *Mandors* (forest stewards) for their area based on general criteria established by the KPH. *Mandors* are responsible for monitoring illegal activities around their villages, devolving accountability for forest conditions to these communities (Antara News-Mataram, 2012; Suara NTB, 2013). This approach fosters increased local representation and a stronger sense of local ownership and support for the forest management system. It is an effort to realign the internal dynamics within communities and also more clearly align their relations with government agencies and programs. Through the *Mandor* program, communities reported 27 cases of illegal activities in 2010, and 28 cases in 2011 (KPH RB, 2012),<sup>7</sup> almost twice as many as the number reported in NTB province as a whole during the same year (Dinas Kehutanan Provinsi NTB, 2012).

To modify or redevelop relations among local actors, effective intermediaries sometimes need to take on the role of mediator (Pham et al., 2010). Since 2010, NTB province has tried to establish a provincial park, encompassing a previously approved Community Forest area. Under the formal recognition of Community Forest, the local community has been developing agroforestry gardens and paying local taxes on non-timber forest products. Designation of a provincial park would invalidate the

usufruct rights previously guaranteed under the Community Forest recognition. Tensions mounted within the community and the local government over the loss of livelihood and tax base vis-a-vis the provincial government (Galudra et al., 2010). The conflict was resolved in 2014 when the KPH RB facilitated a series of dialogs among the parties and allowed the community to include their area within the KPH RB, outside of the designated park boundary (Jang and Bae, 2014).

The accomplishments of the KPH RB can be viewed as successful implementation of a number of key regulations from the center, e.g., application of spatial planning, pioneering forest partnership arrangements (*Kemitraan Kehutanan*), and those from the provincial level, e.g., the *Mandor* program. However, the implementation of above policies would not have been possible without the KPH fulfilling the PES intermediary's role of networking, aligning and translating, in reconciling the needs for improving forest management with recognition of de facto property rights and local livelihood needs. Although this success may be isolated, we argue the lessons learned can be expanded to cultivate effective potential REDD+ intermediaries at a larger scale.

## 5. Building effective REDD+ intermediaries

Since the 2007 Bali Conference of the Parties, Indonesia anticipated substantial financial gains through REDD+ initiatives. Sahide et al. (2015) concluded that climate change is one of the international regimes that is highly relevant to core problems in Indonesia. The backing of highly mobilized actors makes difficult domestic political action more likely. As of February 2014, the MoF had designated 531 KPHs in 28 of 33 provinces, including 183 protection forests (24 million ha), and 437 production forests (60 million ha), for a total of 84 million ha, which is almost 63% of Indonesia's forest estate (Ministry of Forestry, MoF, 2014). However, political power in REDD+ decision-making in Indonesia is concentrated in the national and provincial-level governments, which are extremely vulnerable to entrenched business interests (Brockhaus et al., 2011; Luttrell et al., 2012). This makes direct political actions that satisfy civil society's demands for safeguards and environmental justice much less likely (Brockhaus and Di Gregorio, 2014). Despite the hefty expectations, many of these KPHs only exist on paper, without staff or operating budgets. Even with established KPHs (120 model KPHs operating as of 2014), most of the KPHs lack the institutional and technical capacity to implement mandated policies and regulations (Bae et al., 2014a). Thus, what the KPH system represents at the moment is an opportunity, rather than a promise, to systematically cultivate REDD+ intermediaries in Indonesia. The case of the KPH RB allows us to be cautiously optimistic. Nevertheless, we offer here a number of recommendations for cultivating individual KPHs as effective REDD+ intermediaries, recognizing their dual roles as both policy and PES intermediaries.

To understand individual KPHs' role as policy intermediaries that implement policies and regulations, Matland's typology of policy implementation process may be helpful (Matland, 1995). Matland classified policy implementation process in terms of ambiguity and conflict. Implementation of low ambiguity and low conflict policies, such as smallpox eradication, can be streamlined from the central to local. Implementation of such policies can be a linear administrative procedure, and becomes largely a matter of available resources. However, REDD+-related policies are plagued with low ambiguity and high conflict, where implementation requires power to apply coercive or remunerative mechanisms, or with high ambiguity. Policies with high ambiguity would require local policy actors to define what the policy objectives are and what the outcomes should be. Local contexts, such as characteristics of active local actors and their "coalitional strength", would dictate the implementation process (Matland, 1995). Thus, the implementation process for REDD+-related policies cannot be linear or uniform, especially in Indonesia, given the immense diversity of physical, social, economic and cultural environments and the highly

<sup>6</sup> NTB province authorized the KPHs under their jurisdiction to hire forest stewards to meet their specific technical needs in the field through Provincial and gubernatorial regulations (Peraturan Daerah No. 13/2014; revising Peraturan Daerah Provinsi NTB No. 3/2008; Peraturan Gubernur No. 21/2015).

<sup>7</sup> The KPH RB reprimanded most of these cases internally by assigning community services to the perpetrators. They are working on organizing community groups (*Dewan Pembina Awiq-Awiq*) that can impose sanctions against minor crimes internally (Madani Mukarom, personal communication March 17, 2014).

decentralized political structure. Public policy literature suggests that explicit recognition of the “co-constructed” nature of the implementation process is important to improve policy communication and build the capacity of policy intermediaries (Datnow et al., 2002; Hamann and Lane, 2004). Kartodihardjo and Suwarno (2013) have analyzed the KPH related policies and regulations and found a number of inconsistencies. They argued that the institutional and regulatory problems limit KPH establishment and operation. They recommended revising and improving up to 45 regulations from the central government, so that they are consistent with KPH's mandated functions and duties at the local level. In addition to improving the content of policies and regulations, there is a need for supporting a process whereby policy intermediaries can develop a shared understanding of their roles and capacity needs (Lane and Hamann, 2003).

As PES intermediaries, REDD + intermediaries must become active in shaping and transforming the REDD + planning process to suit local contexts, and in recruiting external buyers for investment, rather than simply functioning as passive and impartial brokers. To assume this more transformative function, they must develop specific strategies to bring together (*network*) local actors for REDD + project design, *align* the interests and demands of different local actors to redevelop their relations for shared goals, and *translate* those goals to fit into the national and international agenda of carbon stock improvement. All of these roles have been shown to be critical for effective intermediaries in PES arrangements (Davis et al., 2014, Moss et al., 2009). While ecosystem services, such as carbon sequestration and biodiversity, have global implications, they are often viewed as abstract notions by local communities and other stakeholders. Alternatively, more local and direct ecosystem services, especially watershed services, can attract immediate interest and buy-in. For the KPH RB, there are some important precedents for translating an international agenda to the local context. International organizations working in Lombok, such as the World Wildlife Fund and Flora and Fauna International, have successfully adapted their primary organizational mission of biodiversity conservation (global interests) to a focus on watershed protection (local interests) (Pirard, 2012). The development of a local payment for watershed services program by municipal rate-payers and forest communities is one of the very first examples of PES systems in Indonesia (Pirard, 2012; Prasetyo et al., 2009).

There have been many calls for providing more financial and human resources for individual KPHs, focusing on building their technical expertise for forest planning and inventory (e.g., Bae et al., 2014a), creating more consistent and coherent policies and regulations (Kartodihardjo and Suwarno, 2013), and clarifying the bureaucratic responsibilities of forest administration and management (Sahide and Giessen, 2015). However, there has been less attention paid to the role of the KPHs as REDD + intermediaries – cultivating their capacities as policy and PES intermediaries. Government agencies in Indonesia are often isolated from other organizations influential in formulating REDD + related policies, despite the fact that communication among differing perspectives has been shown to be a critical aspect of effective governance and learning (Moeliono et al., 2014). More concerted efforts from the central and provincial governments, as well as from international donors working with individual KPHs, will be needed to position local KPHs as effective intermediaries.

## 6. Conclusions

REDD + as a PES strategy attracted immediate and widespread support from various international actors frustrated with the slow progress of various policy inducements for climate mitigation and conservation. However, discussions of PES arrangement in general, and REDD + literature in particular, have tended to focus on targeting buyers and providers in isolation, while overlooking the important functions of intermediaries (Davis et al., 2014, Moss et al., 2009). In this paper, we have examined the necessary roles of intermediaries in REDD +

projects. The case study from Lombok showed that the drivers of deforestation and forest degradation include land tenure conflicts, population growth, lack of economic opportunities, and illegal logging, all of which are exacerbated by expanded infrastructure, weak enforcement, and ineffective forest governance. The local KPH has made significant progress in addressing these drivers, especially by improving forest governance in partnership with local communities. Their accomplishments have been made possible through their efforts to fulfill the dual roles of policy and PES intermediaries.

For the KPHs to fulfill their mandate as effective REDD + intermediaries, explicit recognition and support for these dual roles is necessary, from the central and provincial governments, as well as from international donors. Greater consistency in government policies and regulations, improved policy communication, and the commitment to strengthening the capacity of individual KPHs are all key elements for enabling the KPHs to fulfill the high expectations. Perhaps the true reward of REDD + will be found through this process of transformation toward “actions to improve governance and regulations”, ranked by 32 experts and REDD + project developers as the highest criterion in defining REDD + success (Jaung and Bae, 2012).

## Conflicts of interest

The authors declare no conflict of interest.

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