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How are REDD+ Proponents Addressing Tenure Problems? Evidence from Brazil, Cameroon, Tanzania, Indonesia, and Vietnam

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Summary. — This paper assesses proponent activities to address tenure insecurity in light of actions required for effective and equitable implementation of REDD+. Field research was carried out at 19 REDD+ project sites and 71 villages in Brazil, Cameroon, Tanzania, Indonesia, and Vietnam. Results show proponents addressed tenure insecurity by demarcating village and forest boundaries and identifying legal right holders, but were limited in their ability to resolve local tenure challenges that were national in origin and scope. Still needed are national tenure actions, integration of national and local tenure efforts, clarification of international and national REDD+ policies, and conflict resolution mechanisms.

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1. INTRODUCTION

REDD+ promises to mitigate climate change through the application of conditional incentives for protection and enhancement of the carbon sequestration functions of forests. It is widely recognized that tenure insecurity, ambiguity, and contestation must be addressed early for REDD+ to do this effectively (Eliasch, 2008; Stern, 2006; Westholm, Biddulph, Hellmark, & Ekbohm, 2011). In this paper we explain how REDD+ proponents are intervening on tenure, which to date has not yet been documented systematically. We elaborate an argument for why resolving tenure insecurity early is important, how it must be done, and evaluate early proponent efforts against those criteria. We place emphasis on the tenure of those living in forests, because they are the ones who will implement REDD+ on the ground, and who will benefit or lose from its method of implementation.

Currently there are various institutional levers motivating early attention to tenure in REDD+. This attention is partly

a response to a broad donor consensus, predating REDD+, that general tenure clarification (not specific to forests) is important for attaining a broad range of development and

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environment goals that include poverty reduction, regional economic growth, and investment in land and resources by landowners (Deininger, 2003; DFID, 2007; FAO, 2002; SIDA, 2007). More recently, REDD+-related institutions are formalizing a call for attention to tenure. There are mandates for tenure clarification through the World Bank's REDD-readiness social safeguards measures (via the Forest Carbon Partnership Facility) and the United Nations (via UN-REDD); third-party certification through the Climate, Community and Biodiversity Alliance (CCBA, 2008; CCBA & CARE, 2010); and national governments engaging in REDD-readiness. These institutions do not spell out in detail why resolving tenure insecurity early is so important or how to do it.

Here we first explain the tenure context in which REDD+ is being introduced and the kinds of interventions proponents intend to implement in this context. We then explain why resolution of tenure is crucial, and recommend specific proponent actions that must be taken so REDD+ can be implemented effectively and equitably. We propose three questions, addressed in this paper, designed to evaluate proponent attention to those actions.

In developing countries, forest tenure conditions tend to be contested, overlapping, and insecure (RRI, 2008; Sunderlin, Hatcher, & Liddle, 2008; White & Martin, 2002). These challenging conditions result from state appropriation of forests centuries ago. In 36 of the world's most forested countries, accounting for 85% of the global forest estate, national governments have statutory ownership of 60% of forest areas (RRI, 2012a). Lack of local control over forest use and management decisions is a lasting legacy of state appropriation (Ellsworth & White, 2004). The dominance of state control varies among regions. Governments officially control about a third of the forest estate in Latin America, about two-thirds in Asia, and virtually the entire area in Africa (RRI, 2012b; RRI & ITTO, 2011). Indigenous and traditional peoples and other forest communities have customary tenure claims over vast areas of forest that are under formal government ownership. Overlapping claims on forest lands and resources are rife and are not just between governments and local people, but also among government ministries, between government and private sector investors, between private sector investors and local people, and among local communities (Holland *et al.* 2013). Although there has been a general trend in recent decades toward forest tenure reform that has sometimes legitimated customary claims and devolved forest governance to the local level (Larson, Barry, & Dahal, 2010; Larson, Barry, Dahal, & Colfer, 2010), this trend has been slow and very uneven among countries, and does not measure up to the urgent need to address forest tenure insecurity (Larson, 2010).

In almost all REDD+ projects of the type in this study, the proponent intends to restrict access to a local forest which will be protected and be the source of carbon additionality and revenue. Local residents are compensated for restricted access with positive incentives such as livelihood supports, and a share in the carbon funding stream when conditional REDD+ incentives (payments) are applied. Crucially, proponents assume that local stakeholders will have a key role in forest management in REDD+, and that clarification and improvement of local tenure security are key to fulfilling that role.

Against the backdrop of problematic tenure conditions and proposed proponent interventions, we identify four reasons why tenure must be addressed before REDD+ begins:

- *Identify the right holder.* The essence of REDD+ is to reward those who maintain or enhance the carbon sequestration of forests, so it is necessary to determine in advance the right holders to that stream of benefits.¹

- *Identify the responsible party.* Another hallmark of REDD+ is that the right holders to forest carbon must be held accountable in the event that they fail to fulfill their obligation. (This is the "conditional" part of conditional incentives.)

- *Prevent a resource rush.* The rights and responsibilities in REDD+ (1 and 2 above) must be sufficiently clear and legitimate to allocate the benefit stream fairly and prevent a resource rush when REDD+ gives value to a new commodity (forest carbon).²

- *Protect existing rights and livelihoods.* REDD+ will inevitably prohibit certain uses of forest resources. This must be done in such a way that pre-existing access and management rights and livelihoods are not summarily violated without due process.

Hence, in this article, appropriate resolution of tenure insecurity is viewed as that which is sufficient to determine the holders of rights and responsibilities, to secure their rights, to avoid a resource rush, and to protect local livelihoods and rights against the effects of forest use restrictions. In this regard, the needs of REDD+ and the needs of local people should be adequately balanced, in the interest not only of equity and ethics, but also of the legitimacy and long-term sustainability of REDD+, which requires local support and buy-in (Larson & Petkova, 2011). Hence, the research recognizes villagers in REDD+ project sites as the primary right holders, and the data presented in this article begin with the issue of their tenure security.

We argue that there are three tenure-related actions proponents must undertake to assure REDD+ initiatives are effective and equitable. First, proponent efforts must address the reasons for clarifying tenure highlighted above: identifying the right holders who will be the beneficiaries of project benefits and those who bear responsibility for assuring project goals are met, preventing a resource rush, and protecting existing rights and livelihoods. This includes identifying existing tenure challenges (concerning either collective action difficulties internal to the village or external claims on forest lands), anticipating those that will emerge in the course of implementing REDD+ interventions and benefit sharing systems, and clarifying tenure over not just forests but also forest carbon.³ Tenure resolution prior to REDD+ presumes forest right holders can successfully exclude competing land uses. Indeed, this is a fundamental requirement for REDD+ to achieve its goal (Wunder, 2009). Therefore special emphasis must be placed on assuring local tenure rights are clear and strong enough to deter external claims on local forests. It is noteworthy that even in cases where forest communities have statutory access or ownership rights, those rights are sometimes not enforced or respected (RRI, 2012a; Sunderlin *et al.*, 2008). Ability to exclude outsiders will be more challenging still in the coming years and decades as pressure on land resources (including but not limited to forests) will increase significantly as land scarcity grows and competing uses (food, fuel, and fiber) expand (Cotula, 2011; Smith *et al.*, 2010; World Bank, 2010).

Second, in order to fully overcome the legacy of disenfranchisement in the management of forests, and in order to assure early tenure actions are appropriate in the local context, the local population must be included in decision-making on REDD+ through the implementation of Free Prior and Informed Consent (FPIC).⁴ In REDD+, FPIC is generally done through education in project villages on the relationship of deforestation and forest degradation to climate change, explanation of the aims of the project, discussion of the possible role of villagers in implementing the project, and finally

through requesting permission from villagers for the project to proceed. Given that tenure pre-conditions influence the outcomes of REDD+, and given that these outcomes can in turn affect local rights and livelihoods (see the third and fourth reasons for giving attention to tenure in REDD+), local people must be fully informed about, and give their consent to, planned project activities and interventions. Only in this way can the local voice on the appropriateness of tenure clarification and rights recognition be assured.

Third, tenure issues faced by proponents are influenced not just by local but also national conditions, so local interventions and activities must be embedded in efforts to address those conditions. National action on tenure is needed because the source of forest tenure insecurity resides in country-wide historical patterns and processes that cannot be reduced to, or satisfactorily resolved at, the level of the locality. Given the pervasiveness of forest tenure insecurity for most local stakeholders, proponents recognize that national-level actions such as resolution of competing land use classifications among branches of government, implementation of cadastral surveys, adjudication of territorial claims of indigenous peoples, regularization of tenure status,⁵ and forest tenure reform are often needed to complement local level actions. Relatedly, attention must be given to a wide spectrum of governance factors, including but not limited to those that affect local tenure conditions (FAO & ITTO, 2009; RRI & ITTO, 2011).⁶ The underlying causes of deforestation and forest degradation threaten not just the integrity of local ecosystems but also tenure security. REDD+ national policies and measures are necessary to address the underlying causes of deforestation and degradation because they often reside outside the boundaries of project sites (Sunderlin & Atmadja, 2009; Wertz-Kanounnikoff & Angelsen, 2009). In addition, it is important to confront corruption and illegality because they often motivate and sustain large-scale clearing of forests (Alley, 2011; World Bank, 2006) and pose a direct threat to the implementation of REDD+ (Barr, 2011; Tacconi, Downs, & Larmour, 2009). Several observers make the case that to successfully address rights in connection with climate change and REDD+, it is necessary to work across local and national scales of governance (Doherty & Schroeder, 2011; FAO, 2011; Sikor *et al.*, 2010).

This paper asks how proponents are addressing tenure insecurity in light of these three criteria. Drawing on data collected at 19 project sites and 71 villages in 2010–2012 in five countries (Brazil, Cameroon, Tanzania, Indonesia, and Vietnam), we pose three specific research questions:

1. What are the forest tenure conditions at the project sites from the point of view of villagers?
2. What actions have been taken by the proponent in relation to tenure issues?
3. What are national factors affecting tenure security at project sites and how are the proponents addressing them?

2. METHODS

The Global Comparative Study on REDD+ (GCS-REDD) of the Center for International Forestry Research (CIFOR) is a four-year research project (2009–2013) that aims to provide policy and technical guidance to REDD+ stakeholders. The research reported in this paper was performed under Module 2 of GCS-REDD, which focuses on sub-national REDD+ project sites.⁷ Module 2 aims to assess the performance of REDD+ projects in terms of the so-called three Es (effectiveness, efficiency, and equity) and co-benefits (ability of

REDD+ to maintain and improve livelihoods and wellbeing, governance and rights, and ecosystem services). The Module 2 research team (including the co-authors) aims to provide robust empirical evidence of the performance of REDD+ through a counter-factual approach called BACI (before–after/control–intervention; Jagger, Sills, Lawlor, & Sunderlin, 2010). Performance in intervention (REDD+) and control (non-REDD+) villages will be compared both before and after the introduction of REDD+ interventions. This article reports on some of the early (before) process outcomes in intervention villages.

Initially six study countries were selected on the basis of the following criteria: large tropical forest countries where REDD+ is being pioneered and that have many project sites (Brazil, Indonesia); diversity of stages on the forest transition (e.g., high deforestation in Indonesia and low in Vietnam); convenience of a CIFOR office in the country (Bolivia, Brazil, Cameroon, Indonesia, and Vietnam); and strong donor interest (Brazil, Indonesia, and Tanzania). Bolivia had to be removed from the Module 2 research agenda when the government ceased being involved in REDD+. The resulting five countries (Table 1) are a subset of the nine countries in GCS-REDD as a whole (the other four are Bolivia, Peru, Democratic Republic of Congo, and Nepal).

GCS-REDD focuses on REDD+ projects where most carbon benefits will be derived from reduced deforestation and degradation, or from implementing forest conservation, restoration, or management, rather than via afforestation and reforestation outside of existing forests. In addition, we focused on project sites that: intend to quantify their activities through monitoring, reporting, and/or transacting reductions in carbon emissions or increases in carbon stock; had defined boundaries at the beginning of our fieldwork period in 2010; would not introduce conditional incentives before the “before” data were collected; and had a reasonable chance of lasting. Our sample under-represents projects that target indigenous people in Brazil (due to political sensitivities) and projects that are led by private sector proponents (they are reluctant to get involved in research). All project sites in our sample in Brazil, Cameroon, Indonesia, and Vietnam are in the humid forest zone where carbon content tends to be relatively high, whereas the Tanzania sites are in drier forests where carbon content tends to be lower.

The project sites are unevenly representative of the forest tenure conditions in the five countries. The sites in Indonesia are representative in the sense that this country has a relatively small area of its forest under community use or ownership (RRI & ITTO, 2011), and this is true at the project sites. In Cameroon and Tanzania about 5–10% of the forest area is under community management (RRI & ITTO, 2011), yet all of our project sites involve community use rights. Although not representative of their respective country conditions, our Cameroon and Tanzania sites offer valuable insights for REDD+ proponents who seek community forestry as a basis for their engagement. Brazil by world standards has a large share of its forests under indigenous or community use or ownership rights, yet all of our project sites are under an individual use right system. The four project sites in Brazil include residents in land reform settlement projects, which are a priority target of these REDD+ initiatives. Vietnam has a relatively large share of its forest estate under community ownership tenure (Dahal, Atkinson, & Bampton, 2011), and the study site reflects this pattern.

Four villages were selected at each project site.⁸ These villages were selected from a sample frame of 16 intervention villages. Under the BACI method 16 intervention and 16 control

Table 1. *Countries, REDD+ project sites, and proponent organizations*

Country	Project site	Abbreviated name	Proponent organization
Brazil	Acre State System of Incentives for Environmental Services (SISA)	Acre	Climate Change Institute
	Northwest Mato Grosso REDD Pilot Project (Cotriguaçu Sempre Verde)	Cotriguaçu	Instituto Centro de Vida (ICV)
	Sustainable Settlements in the Amazon: the challenge of transition from family production on the frontier to a low carbon economy	Transamazon	Amazon Environmental Research Institute
Cameroon	Central Xingu REDD + Pilot Program	SFX	The Nature Conservancy Brazil
	Payment for Ecosystem Services (PES) project in Cameroon South and East Region	CED	Centre pour l'Environnement et le Développement
Tanzania	Mt. Cameroon REDD Project	Mount Cameroon	GFA-Envest
	Community Based REDD Mechanisms for Sustainable Forest Management in Semi-Arid Areas	TaTEDO	Tanzania Traditional Energy Development and Environmental Organization
	Making REDD work for Communities and Forest Conservation in Tanzania	TFCG Kilosa	Tanzania Forest Conservation Group
	Making REDD work for Communities and Forest Conservation in Tanzania	TFCG Lindi	Tanzania Forest Conservation Group
	HIMA—Piloting REDD in Zanzibar through Community Forest Management	CARE	CARE International in Tanzania
	Building REDD Readiness in the Masito Ugalla Ecosystem Pilot Area in Support of Tanzania's National REDD Strategy	JGI	Jane Goodall Institute
	Mpingo Conservation Project	Mpingo	Mpingo Conservation and Development Initiative
Indonesia	Reducing Carbon Emissions from Deforestation in the Ulu Masen Ecosystem	Ulu Masen	Government of Aceh (Task Force REDD Aceh)
	REDD Pilot Project Development, Community Carbon Pools	KCCP	Fauna and Flora International Indonesia
	Kalimantan Forests and Carbon Partnership (KFCP)	KFCP	Indonesia-Australia Forest Carbon Partnership (IAFCP)
	The Rimba Raya Biodiversity Reserve Project	RRC	Infinite Earth (PT. Rimba Raya Conservation)
	Katingan Conservation Area: A Global Peatland Capstone Project	RMU	Starling Resources / PT. Rimba Makmur Utama (RMU)
	Berau Forest Carbon Program	BFCP	The Nature Conservancy
Vietnam	Cat Tien Landscape Pro Poor REDD Project	Cat Tien	The Netherlands Development Organization (SNV)

Source: GCS REDD field research, CIFOR, 2010–2011.

villages were statistically matched on a set of variables deemed important for understanding the livelihood and conservation effects of REDD+ (Sunderlin *et al.*, 2010).

The units of analysis in this paper are the project site and the intervention village. See Duchelle *et al.* and Resosudarmo *et al.* (2013) for more in-depth analysis (respectively) of the Brazil and Indonesia cases.

The research was conducted through formal survey interviews with the technical staff of proponent organizations and with village respondents. Two survey forms were used with proponents: a proponent appraisal compiling general information about the project and containing several general questions on tenure; and a more detailed survey on participation and tenure. At least one technician per project was interviewed. Two survey forms were used with village respondents. A village survey form was filled by first gathering secondary data from people judged knowledgeable about the village and then holding a focus group meeting with 10–15 villagers. A household survey form was administered to a random sample of 30 households in each village.

In interviews with household respondents tenure security was defined as the respondent's reported confidence that the household will continue to be able to use, at least for the next 25 years, its current land assets. Tenure security is defined in a binary way ("secure" or "insecure") for analytical clarity. This

question was complemented by others concerning villager perceptions of tenure insecurity, outsider use of forest land and resources, exclusion rights (in principle and in practice), local rule compliance, and proponent perceptions of tenure problems and plans. The information on proponent actions is based on surveys with proponents, and national factors were identified through secondary literature and field notes.

3. RESULTS

(a) *Question 1: What are the forest tenure conditions at the project sites from the point of view of villagers?*

In 39 villages (55% of the total 71 villages) respondents reported that tenure over at least a portion of their lands (forest and non-forest) was insecure (Table 2). Respondents were asked about the reasons for insecurity and could offer more than one reason. The reasons for insecurity were classified as: land competition, contestation, conflict, or invasion (39%), lack of title (27%), ease of revoking rights (15%), restrictions on land use by government or company (11%), and others (10%). External reasons for tenure insecurity (e.g., "competition for land with outside company") outnumbered internal reasons (e.g., "competition for land among villagers") by a ratio of 5–1.

Table 2. Perception of tenure security in villages at 19 project sites

Country	Project site	Number of villages with tenure insecurity over at least a portion of village lands	Reasons for insecurity (Number of villages)				
			Land competition, contestation, conflict, and invasion	Lack of title	Rights can be easily revoked	Restrictions on land use by government or company	Other
Brazil	Acre	4 of 4	2	2		1	
	Cotriguaçu	2 of 4	1	1			
	Transamazon	0 of 4					
	SFX	2 of 4	3	1			
Cameroon	CED	2 of 2	2	2	2	2	
	Mount Cameroon	4 of 4		2		1	
Tanzania	TaTEDO	1 of 4				1	
	TFCG Kilosa	3 of 5		2			
	TFCG Lindi	2 of 4			1		1
	CARE	2 of 4			2		1
	JGI	0 of 4					
	Mpingo	0 of 4					
Indonesia	Ulu Masen	2 of 4		2			
	KCCP	4 of 4	7	3	5	2	
	KFCP	4 of 4	4	4			3
	RRC	4 of 4	8				1
	RMU	3 of 4	1		1	1	1
	BFCP	Data not available					
Vietnam	Cat Tien	0 of 4					
	All sites	39 of 71 (55%)	28 of 71 (39%)	19 of 71 (27%)	11 of 71 (15%)	8 of 71 (11%)	7 of 71 (10%)

Source: GCS REDD field research, CIFOR, 2010–2011.

Respondents of the village survey were asked to identify the types of current external users of village forests, and what kind of permission was granted—if any—for these activities. Across all countries, neighboring villagers were the most frequent type of external user (Table 3). In Brazil, Indonesia, and Vietnam there tended to be a diversity of small-scale (e.g., neighboring villager, colonist) or large-scale (e.g., logging company, agro-industrial firm) users, whereas in Cameroon and Tanzania there were only small-scale users (Table 3). In 9% of cases external activities did not require permission, and in 24% of cases permission was given by the government. In 29% of cases the external uses occurring were prohibited (Table 3). Only in 38% of cases was permission granted by the villages or households. The granting of permission for external use of forests does not mean these uses are problem free, however. In six villages, tenure insecurity on at least a portion of village lands coincides with an external forest use permitted by the government or the village.

In spite of all these external users, 93% of respondents in 66 villages (of the total) believe that they have the right to decide who can or cannot use local forests (Table 4). Villagers reported that they were successful in excluding unwanted outsiders in 41 villages (58%) and were unsuccessful in 13 villages (18%). In 12 villages (17%) there were no unwanted outsiders. These findings suggest that though there is near-universal villager assumption of having a *right* to exclude outsiders, these rights are not fully exercised.

With regard to forest uses and rights internal to the village, respondents were asked to rate villager compliance with local forest use rules. The ratings were: “low” at 12 of 71 villages (17%), “moderate” at 30 of 71 villages (42%), and “high” at 24 of 71 villages (34%).

There are notable country-specific tendencies in the village data on tenure insecurity, external forest use, and compliance with forest rules (Table 5). Indonesia is the most problematic country in our sample, with a very high rate of perceived tenure insecurity (85% of study villages), external use of local forests (90%), and a relatively high rate of failure to exclude external users (35%). Like Indonesia, Brazil has a relatively high rate of external use of local forests (69%) and Cameroon has a high rate of tenure insecurity (100%). The study villages in Tanzania and Vietnam are on the low end of the spectrum of tenure insecurity (32% and 0%, respectively). Vietnam appears to be the least problematic case, with the exception of the forest rule compliance category.

(b) *Question 2: What actions have been taken by the proponent in relation to tenure issues?*

We answer this question by first reporting the proponent perceptions of tenure challenges and then the actions they have taken to reduce tenure insecurity. We then report on the implementation of FPIC, which indirectly involves early action on tenure rights.

Some of the tenure challenges described by proponents are common to clusters of project sites (Table 6). Lack of legal clarity and/or security of local land and forest tenure arrangements (e.g., lack of title) was mentioned at 11 of 19 sites: all four Brazil sites, CED, Mount Cameroon, TFCG Kilosa, TFCG Lindi, JGI, KFCP, and Cat Tien. Tenure contestation and conflict were identified as a problem at 10 of 19 sites: Cotriguaçu, SFX, Mount Cameroon, TFCG Kilosa, Mpingo, and

Table 3. *External uses of village forests by type of use and type of permission granted*

Country and type of external forest user	Distribution of external forest users by type (number and % of intervention villages)	Kind of permission granted (number of villages)			
		Does not require permission	By government	By village or household	Prohibited
Brazil					
Neighboring villagers	4 of 16 (25%)			4	
Seasonal users	4 of 16 (25%)			4	
Logging concession	2 of 16 (13%)		2		1
Small-scale loggers	2 of 16 (13%)			2	
Cattle ranchers	1 of 16 (6%)				1
Professional fishermen	1 of 16 (6%)				1
City dwellers	1 of 16 (6%)			1	
Hunters	1 of 16 (6%)				1
Colonists	1 of 16 (6%)			1	1
Other	2 of 16 (13%)			1	2
Cameroon					
Neighboring villagers	3 of 6 (50%)				3
Tanzania					
Neighboring villagers	11 of 25 (44%)	3		2	7
Seasonal users	3 of 25 (12%)	1			2
Other customary users	1 of 25 (4%)				1
Indonesia					
Neighboring villagers	11 of 20 (55%)	2	2	8	1
Seasonal users	7 of 20 (35%)		4	7	
Agro-industrial firm	7 of 20 (35%)		6	3	4
Logging concession	3 of 20 (15%)		3	1	
Colonists	2 of 20 (10%)		2	1	1
Plantation	2 of 20 (10%)		2		
Other	4 of 20 (20%)	3	1	1	2
Vietnam					
Neighboring villagers	1 of 4 (25%)			1	
Logging concession	1 of 4 (25%)		1		
Agro-industrial firm	1 of 4 (25%)		1		
Grand total		9 (9%)	24 (24%)	37 (38%)	28 (29%)

Source: GCS REDD field research, CIFOR, 2010–2011.

Note: The table includes data on all study villages except four in Berau, Indonesia. There can be more than one kind of permission granted in a village.

Table 4. Perception of, and degree of success with, right of exclusion in villages at 19 project sites

Country	Project site	No. & % of villages with perceived right to exclude	No. & % of villages with successful attempt to exclude	No. & % of villages with unsuccessful attempt to exclude	No. & % of villages where right to exclude does not apply (no unwanted outsiders)
Brazil	Acre	2 of 4	2 of 4	0 of 4	0 of 4
	Cotriguaçu	3 of 4	3 of 4	0 of 4	0 of 4
	Transamazon	4 of 4	2 of 4	0 of 4	2 of 4
	SFX	4 of 4	0 of 4	2 of 4	2 of 4
Cameroon	CED	2 of 2	2 of 2	0 of 2	0 of 2
	Mount Cameroon	4 of 4	3 of 4	1 of 4	0 of 4
Tanzania	TaTEDO	4 of 4	2 of 4	1 of 4	1 of 4
	TFCG Kilosa	4 of 5	3 of 5	1 of 5	0 of 5
	TFCG Lindi	4 of 4	2 of 4	1 of 4	1 of 4
	CARE	4 of 4	4 of 4	0 of 4	0 of 4
	JGI	4 of 4	4 of 4	0 of 4	0 of 4
	Mpingo	4 of 4	4 of 4	0 of 4	0 of 4
Indonesia	Ulu Masen	3 of 4	0 of 4	2 of 4	1 of 4
	KCCP	4 of 4	2 of 4	2 of 4	0 of 4
	KFCP	4 of 4	3 of 4	1 of 4	0 of 4
	RRC	4 of 4	2 of 4	2 of 4	0 of 4
	RMU	4 of 4	3 of 4	0 of 4	1 of 4
	BFCP	Data unavailable	Data unavailable	Data unavailable	Data unavailable
Vietnam	Cat Tien	4 of 4	0 of 4	0 of 4	4 of 4
Total	All sites	66 of 71 (93%)	41 of 71 (58%)	13 of 71 (18%)	12 of 71 (17%)

Source: GCS REDD field research, CIFOR, 2010–2011.

Table 5. Tenure insecurity, external forest use, attempts to exclude external users, and degree of local forest rule compliance classified by country

Country	Villages with tenure insecurity over at least a portion of village lands (number & %)	Villages with current external use of forests (number & %)	Villages where specific current external use(s) of forests prohibited (number & %)	Villages with unsuccessful attempt to exclude external users (number & %)	Villages with low or moderate forest rule compliance by villagers (number & %)
Brazil	8 of 16 (50%)	11 of 16 (69%)	5 of 16 (31%)	2 of 16 (13%)	12 of 16 (75%)
Cameroon	6 of 6 (100%)	3 of 6 (50%)	3 of 6 (50%)	1 of 6 (17%)	3 of 6 (50%)
Tanzania	8 of 25 (32%)	11 of 25 (44%)	7 of 25 (28%)	3 of 25 (16%)	13 of 25 (52%)
Indonesia	17 of 20 (85%)	18 of 20 (90%)	5 of 20 (25%)	7 of 20 (35%)	11 of 20 (55%)
Vietnam	0 of 4 (0%)	2 of 4 (50%)	0 of 4 (0%)	0 of 4 (0%)	4 of 4 (100%)
Total	39 of 71 (55%)	45 of 71 (63%)	20 of 71 (28%)	13 of 71 (18%)	43 of 71 (61%)

Source: GCS REDD field research, CIFOR, 2010–2011.

Note: Includes all project sites except Berau, Indonesia.

all five sites in Indonesia. It is noteworthy that at all five sites in Indonesia there were claims by concessions on at least a part of the lands planned for REDD+. Proponents at four sites said lack of clarity over forest carbon was an emerging problem: TaTEDO, TFCG Kilosa, TFCG Lindi, and Cat Tien. Lack of clarity of village, district, or forest boundaries was mentioned at four sites: Mount Cameroon, TFCG Kilosa, Mpingo, and Ulu Masen.

A comparison of villager and proponent views on tenure challenges shows similarities and important differences (Tables 2 and 6). Tenure contestation and conflict were mentioned as a problem by villagers at eight sites and by proponents at 10 sites, with six of those sites in common: Cotriguaçu, SFX, Mount Cameroon, KCCP, RRC, and RMU. Lack of legal clarity and/or security of local tenure (e.g., lack of title) were mentioned as a problem by villagers at nine sites and by proponents at 11 sites, with six of those sites in common: Acre, Cotriguaçu, SFX, Mount Cameroon, TFCG Kilosa, and KFCP. At some sites (Transamazon, JGI, Mpingo, Cat Tien) villager respondents did not perceive any tenure insecurity and related tenure challenges, whereas proponents at all sites said there were ten-

ure issues in need of attention. At Transamazon proponents acknowledge the presence of many unofficial settlers with no documentation of land rights. At JGI proponents perceive that community land rights are unclear. At Mpingo proponents see themselves as dealing with a large tenure challenge related to unclear village boundaries. At Cat Tien proponents perceive a problematic discrepancy between indigenous people and the government on ownership rights. Understandably, villager perceptions of tenure insecurity are framed in the context of consequences for their wellbeing and livelihood security and are infrequently related to plans for REDD+. In contrast, proponent perceptions of local tenure insecurity are motivated by attention to local wellbeing and livelihood security, and are strongly oriented to planning for REDD+. Proponents are pro-actively attuned to tenure challenges that are not (always) perceived as problematic locally, yet which are important to address in preparation for implementing REDD+. This likely explains why lack of clarity of tenure over forest carbon is mentioned by four proponents but not by any villager respondents.

Some proponents' strategies to resolve tenure insecurity are common across many or most sites: identify the sources of

Table 6. *Proponent perception of tenure challenges at 19 project sites*

Country	Project site	Nature of tenure challenge
Brazil	Acre	No legal recognition of territorial rights in project priority area
	Cotriguaçu	Rural smallholders without clear land rights. Tenure conflict. Land not compliant with environmental law
	Transamazon	Many “squatters” with no documentation of land rights. Need to improve system of property registration with National Agrarian Reform Agency
	SFX	Tenure insecurity and conflict. Need to apply various tools to clarify tenure e.g., through Rural Environmental Cadaster
Cameroon	CED	Incompatibility between customary rights and collective management
	Mount Cameroon	Encroachment in national park by smallholders and agro-industrial company. Company reclaiming lands from smallholders. Conflict between indigenous inhabitants and migrants
Tanzania	TaTEDO	Conflict between customary and legal tenure. Lack of clarity on rights of communities to benefits from carbon credits attributable to their village land
	TFCG Kilosa & TFCG Lindi	National policy unclear on who owns/has the right to access revenues from carbon. Most villages do not have land certificates yet need them for REDD. To get certificates villages must develop land use plans. In Kilosa, village boundaries were defined years ago but not well defined and this is causing conflict
	CARE	In order to achieve stability in REDD+, need to extend Community Forest Management from 5 to 20 years. There is a need for transparency. In the past, local leaders have taken advantage of customary practice to give favors to the elite
	JGI	Land ownership of community-based organizations unclear and time frame for local tenure unclear. Forest law says 99 years but land law says 3 years
	Mpingo	Government did a bad job of mapping village boundaries. Boundary dispute between two villages. Efforts to mediate were fruitless. There was a land purchase deal that went awry
Indonesia	Ulu Masen	Area of <i>mukims</i> (sub-districts) under debate and must be revised. There is worry concession holders will sue once REDD+ gets underway. Proponents want to meet concession holders to negotiate areas that will become REDD+
	KCCP	In 5 of 9 villages there are external claims on village lands by concession holders. Need to get <i>Hutan Desa</i> status for area
	KFCP	Province respects customary tenure but there is no resolution of basis for ownership. Province has never had harmonized land use plan. In the absence of plan have had to revert to 1983 land use plan, which is untenable
	RRC	Primary tenure issue is conflict over land between the palm oil companies and community
	RMU	Competing claims between local and national governments. Project has not gotten its license because 28,000 ha are in conversion forest that the Regent wants to convert to palm oil
BFCP	3,000 ha have been converted from forest to non-forest classification. There is permission for oil palm even though it is good forest. Many local people are contesting this. Conflict because some local people are going into concession	
Vietnam	Cat Tien	Discrepancy in perceptions of land ownership and tenure between indigenous people and government. Some forest clearing by villagers is technically illegal. Rights to carbon are not clear

Source: GCS REDD field research, CIFOR, 2010–2011.

Table 7. National factors related to implementation of REDD+ at project sites

Country	National factors favoring or undermining efforts to strengthen tenure security at project sites		Integration of national & local tenure efforts	Tendency to do early REDD+ education	Carbon density of forests
	Favoring	Undermining			
Brazil	<ul style="list-style-type: none"> • Forest Code requires identifying land holder responsible for maintaining forest cover • Federal and state-level policy tools link tenure reform to environmental compliance • Proponents collaborate with municipal government to address tenure issues • Relatively strong support for community and smallholder access and ownership rights 	<ul style="list-style-type: none"> • High level of contestation over forest lands though pattern is spatially uneven • High carbon content in forests = relatively high potential revenue stream and contestation over carbon access rights • Problems in the implementation of the Forest Code because minimum forest area requirements are heavily contested 	HIGH	LOW ^a	HIGH
Cameroon	<ul style="list-style-type: none"> • Government support for access rights through community forestry 	<ul style="list-style-type: none"> • Problems in the implementation of community forestry: limited community participation and benefits; financial mismanagement 	LOW	HIGH	HIGH
Tanzania	<ul style="list-style-type: none"> • Support for community access rights through Joint Forest Management and Community Based Forest Management • Village recognized as important governance entity 	<ul style="list-style-type: none"> • Mixed record in implementation of community forestry • Coexistence of state, village, private and collective tenure on forest lands without clear property rights 	LOW	HIGH	LOW
Indonesia	<ul style="list-style-type: none"> • July 2011 declaration by head of the Indonesian President's Special Delivery Unit that government must make a unified national territorial map serving as the basis for land use allocation under the deforestation moratorium in preparation for REDD+, and must recognize, respect and protect customary rights • Decision by President to devote remainder of his term to focus on forests and climate change 	<ul style="list-style-type: none"> • Low government commitment to addressing community tenure issues • Large number of claims by concessions on lands planned for inclusion in REDD+. • National and local governments issue licenses on forest lands in overlapping areas • Unclear forest area boundaries • Reluctance to recognize customary claims and support local access and ownership rights 	LOW	LOW ^b	HIGH
Vietnam	<ul style="list-style-type: none"> • Community forestry has been piloted in Vietnam with useful lessons learned. In some areas it is being practiced • National Forest Inventory under consideration that would clarify forest tenure and ownership at household level 	<ul style="list-style-type: none"> • Government complacency and lack of understanding of local issues is a barrier to further action • Community not recognized as legal entity • Complex forestland tenure and ownership systems 	LOW	HIGH	HIGH

Source: GCS REDD field research, CIFOR, 2010–2011.

^a At three of four project sites in Brazil education about REDD+ postponed.

^b At three of six project sites in Indonesia education about REDD+ postponed.

tenure insecurity and conflict and address the causes where possible; clarify village and forest boundaries; and identify and delimit forests to be set aside and protected. Some approaches are country-specific. In Brazil, proponents are working closely with sub-national governments to clarify tenure and secure titles. In some cases, these actions predate REDD+ yet have gained impetus in order to lay the groundwork for REDD+ (Duchelle *et al.* 2013). Proponent collaboration with the national government involves implementing Rural Environmental Cadastres, or environmental land licenses, and land tenure regularization. In Tanzania, proponents at four of six sites are working to strengthen the legal basis for community-based forest management through getting village land certificates. In Indonesia, all proponents face challenges in upholding their claim over at least some part of their project site or in securing a project license because of counter-claims by concession holders (Resosudarmo *et al.*, 2013). Approaches to dealing with external claims by concession holders are diverse. Ulu Masen, worried that concession holders will sue when REDD+ gets underway, will negotiate with concession holders to decide where REDD+ activities will and will not be. FFI has petitioned to the government to secure *hutan desa* (forest village) tenure status for project villages as a bulwark against external claimants. *Hutan desa*, among possible tenure arrangements on state forest lands, gives local stakeholders relatively strong statutory rights.

Beyond these actions, the approaches are project-specific, for example: property registration (Transamazon); improving spatial planning (Transamazon, KFCP, Cat Tien); lengthening community tenure from 5–20 to 30 years (CARE); clarifying or securing legal ownership of forest carbon (KCCP, Cat Tien); and undertaking community mapping and spatial planning (Mount Cameroon, KFCP).

Proponent actions on tenure include delimiting forests to be protected. All but one proponent intends to restrict access to some portion of local forests. This has implications for local access and management rights, as well as for livelihoods. An approach undertaken by some proponents is to identify, through a participatory process, the boundaries and new management rules of forests to be set aside. These proponents have introduced alternative livelihoods and energy saving practices (e.g., efficient fuelwood stoves) in tandem with forest use restrictions to minimize livelihood impacts. At the time of the field research, proponents had already begun to restrict forest use in at least some of the study villages at nine of the 19 sites.

With regard to Free Prior and Informed Consent (FPIC), broadly speaking, the proponents indicated they are strongly motivated to conduct it and to perform outreach and education on climate change and their REDD+ project. At the time of the field research in mid to late 2011, FPIC exercises had been completed in 15 villages, were in progress in 24, were planned but not yet begun in 13, and were not planned in 8; the status of FPIC was not known for 11 villages. At six of the 19 project sites (three in Brazil and three in Indonesia), proponents have chosen to postpone community education about REDD+ and have chosen not to use the term “REDD+” in their community activities, and in some cases, in the name of the project. One of the main reasons is that they do not want to raise community expectations in the event that REDD+ never happens.

(c) *What are national factors affecting tenure security at project sites and how are proponents responding?*

We answer this question by drawing on secondary information. Table 7 shows national factors that favor and undermine

the resolution of tenure security at the project sites. Brazil is the only country among the five where there is a high degree of integration between national and local efforts to resolve forest tenure issues (Duchelle *et al.*, 2013). Brazil is also an example of a country where both positive and negative factors can strongly influence proponent efforts. Favoring positive outcomes on local tenure efforts are the fact that the Brazilian Forest Code (which predates REDD+) imposes a requirement to identify people and organizations responsible for maintaining at least 80% of their landholdings in forest cover in the Amazon (Sparovek, Berndes, de Oliveira Pereira Barretto, & Fröhlich Klug, 2012); proponents can and do actively collaborate with municipal and provincial government to address tenure issues (Duchelle *et al.*, 2013);⁶ and Brazil is a path-breaking country in the degree to which it has devolved forest use and ownership rights to indigenous peoples and communities (RRI & ITTO, 2011). Yet, the Brazilian Amazon is also fraught with a high degree of contestation and (often violent) conflict for access to forestland (Aldrich, Walker, Simmons, Caldas, & Perz, 2012; Schmink & Wood, 1992) and the high carbon content and potential additionality at REDD+ project sites may invite claimants on those resources.

Relative emphasis on community forestry is an important point of contrast. Brazil and Vietnam stand out, with relatively strong statutory community forest ownership rights covering a quarter of their respective forest estates (Dahal *et al.*, 2011; RRI & ITTO, 2011). Cameroon and Tanzania have community forestry models that are a source of inspiration in the Africa region, though these occupy a small area (5% and 10% of the national forest estate respectively, RRI & ITTO, 2011) and have notable problems of implementation. Indonesia does not provide formal community access or ownership rights to almost any part of its forest (RRI & ITTO, 2011), and the government has been very resistant to recognizing customary forest claims.

4. DISCUSSION

Given the three actions specified in the introduction that proponents must undertake, are the interventions made by REDD+ proponents to resolve tenure insecurity appropriate?

(a) *Attention to the four key reasons why tenure is important in REDD+*

Our interview results suggest that proponent organizations have taken tenure issues seriously and have begun to reduce tenure insecurity at project sites. In most cases this has been done in tandem with outreach and consultative activities including education, a serious commitment to FPIC, and an earnest engagement of local stakeholders in designing and implementing the project. Here we analyze the research findings in light of the four key reasons for establishing tenure security: assuring rights; establishing responsibilities; preventing a resource rush; and minimizing the effects of REDD+ on existing livelihoods and rights. Each is addressed in turn.

Assuring tenure rights will surely be a challenge given that there was reported tenure insecurity in over half the villages (Table 2), external uses of local forests were rampant (Tables 3 and 5), and that although the vast majority of villages perceived that they had the right to exclude external users, such attempts were unsuccessful 18% of the time (Tables 4 and 5).

The results show that there is great unevenness in the resolution of tenure insecurity. None of the proponents view that the job is complete; some believe they are well on their way; some perceive large remaining challenges; and some have ex-

pressed pessimism about assuring rights in advance of REDD+ in all areas within project boundaries. In terms of their satisfaction with outcomes of their tenure-related issues, of the 19 proponents, nine respondents said they were satisfied, three said they were both satisfied and dissatisfied, five said they were not satisfied, and two said they could not offer an assessment. Those that were satisfied (Acre, SFX, CED, Mount Cameroon, TFCG Kilosa, TFCG Lindi, CARE, KFCP, RRC) had for the most part dedicated substantial resources to this effort. At SFX in Brazil, for example, TNC had been working with the municipality to remove it from the Brazilian Environmental Ministry's "black list" by registering 80% of the lands that are in need of registration in Rural Environmental Cadastres (Duchelle *et al.*, 2013). The proponent at SFX believes registration activities have been very successful. The proponent at CARE in Tanzania said he is confident that tenure is secure and provisions are in place to prevent marginalization and protect forests.

Even those who are satisfied, however, state that much more needs to be done. At SFX in Brazil, for example, the proponent reported that the government was about to forcibly remove small farmers, with nowhere to go, from an indigenous area in the north of the municipality. Both the SFX and CARE proponents reported the failure to define carbon rights in their respective countries as a problem.

Those reporting dissatisfaction expressed a range of reasons. Some believed the tenure challenge can eventually be met, while others voiced pessimism and resignation in the face of an intractable problem. Among the reasons for dissatisfaction are the following. At Transamazon, the proponent is concerned the government agency responsible for processing Rural Environmental Cadastres is overloaded. At JGI, there is worry the project area will become "nobody's land" (open access) if tenure issues are not resolved. At Mpingo the proponent is resigned to the fact tenure insecurity cannot be entirely resolved and blames government inadequacies. At KCCP, the proponent expressed considerable frustration about government bureaucratic hurdles and time delays in obtaining *hutan desa* tenure status for project villages.

Establishing responsibility and accountability rests on perceived local legitimacy and acceptance of the REDD+ project and a full understanding of conditional incentives. Yet at six sites there was inadequate understanding of the project because no education had been given specifically on the REDD+ elements of the project, and at few projects was there a clear plan for the structure of incentives (both positive and negative), the size of the positive incentives (will they be large enough to motivate accountability?), and the establishment of a benefit sharing system among stakeholders.

Responsibility must also rest on local belief in, and adherence to, norms and rules of good local forest management. Failing that, collective action problems will undermine local agreements to restrict forest access and use and to improve custodianship of resources. Yet internal rule compliance with respect to local forests is currently strong at only 34% of villages, and is weak at 17%.

Effective enforcement of rights of exclusion is a basic requirement not just for motivating responsibility and accountability, but also for *averting a resource rush*. Proponent efforts did not as yet demonstrate sufficient evidence of effective efforts to deflect outside claims on local lands. While the proponents intend to address the drivers of deforestation and degradation locally, the origin of these drivers is often national in scope and cannot be addressed adequately at the local level alone.

The results of the study show that villagers themselves had success in overcoming outside claims at more than half the villages (58%) and failure at only a sixth (18%). Although these numbers

seem to suggest an optimistic outlook for management under REDD+, this is not necessarily the case for several reasons. First, if there is a significant stream of income in REDD+ it may invite new claimants and competition for land; second, REDD+ potentially collapses if there is a successful challenge from outside claimants (from this point of view a success rate of 58% is not reassuring); and third, these figures do not take into account contestation internal to the village.

In addition, the results show that in nine villages there was at least one external user who gained access to forest resources or land without permission of any kind (from government or from village) to use local forests. These users may not necessarily affect tenure security of local people, but they are still relevant to REDD+ if their activities potentially challenge efforts to protect local forests not used by local people. Importantly, this raises the issue of the rights of poor seasonal, temporary, or nomadic resource users—often among the poorest populations—who depend on forests for livelihoods. Other studies have sometimes noted that these actors often lose out when local community rights are strengthened, as in the case of pygmies in Cameroon (Oyono, Ribot, & Larson, 2006) or nomads in Nepal (Banjade & Paudel, 2008).

Overall, proponents tended to give direct attention to the issue of *protecting livelihoods and rights*. They were striving to assure there would be no unacceptable consequences when forest access was restricted. Yet this activity is most often focused on the current balance between forest access restriction and alternative livelihoods, and does not necessarily anticipate the (possibly) more challenging balancing act when the full array of positive and negative conditional incentives will be implemented. At almost all project sites, determination of the financial value of the stream of REDD+ benefits, the allocation of benefits among stakeholders, and the final arrangements for forest access restrictions have not yet been made. These eventual arrangements have strong implications for the capacity of proponents to protect local livelihoods and rights, and to avert a resource rush.

In summary, important efforts have been made in clarifying and securing tenure rights, but there are still substantial challenges. For example, even if there were uniformly good performances at all project sites, this does not assure an adequate rights platform at the time REDD+ incentives are introduced in the future. National governments have not yet clearly determined who owns forest carbon, a decision which when reached may or may not override tenure arrangements at project sites. A case that illustrates the importance of national policy on tenure is that of Papua New Guinea, where statutory forest ownership rights are nominally strong at the community level (RRI & ITTO, 2011), yet government issuance of credits for forest carbon in 2009 threatened deprivation of property and carbon rights for customary land owners (Dix, 2011).

Forest carbon content per unit area is on average more than twice as large in humid as compared to dry forests (Gibbs *et al.*, 2008).¹⁰ Combined with lower average human population density in humid forests compared to dry forests,¹¹ per capita forest carbon benefits to local stakeholders in humid forests are potentially significantly higher. In forests at project sites with higher per capita forest carbon content, there may be greater need for tenure clarification. High forest carbon content represents relatively higher (potential) additional income from avoiding deforestation and degradation, with proportionately greater interest of claimants in the carbon resource in these areas. This in turn means greater potential challenges in determining legal right holders, assuring effective rights of exclusion, and averting a resource rush and destabilization of local livelihoods. Thus Brazil, Cameroon, Indone-

sia, and Vietnam, where forest carbon content is relatively high, may experience more intense tenure challenges related to forest carbon benefits as compared to Tanzania (Table 7).¹²

Current efforts at addressing tenure at REDD+ project sites are focused on existing challenges such as defining village and forest boundaries and resolving tenure conflicts. There is clearly also an anticipatory element to activities such as identifying prospective legal right holders. Yet as noted earlier, the adequacy of tenure clarification activities will only be known when REDD+ incentives are in place at project sites, when national laws specifying rights to forest carbon are enacted, when benefit sharing mechanisms have been established, and when the size of the stream of benefits is known. Most of the key local tenure issues are latent (because they are untested) and will only become fully evident to all stakeholders when REDD+ gets underway in the operational sense.

Proponents logically want a large stream of benefits when REDD+ gets underway so that conditional incentives for forest protection and carbon sequestration are strong. Only if these benefits are large enough does REDD+ stand a chance of being cost-effective. Recent national policy developments in Brazil and Indonesia have shown that the funding stream in REDD+ will have to be raised substantially to outbid business as usual and assure that vast stretches of forest are not converted to other uses.¹³ At the same time, restrictions on forest use may be enforced more strictly or expanded to cover a larger area of forest to assure additionality and protect forest carbon income (negative incentives). A high income stream at the local level (positive incentives) encourages competition for access to forest carbon rents. The larger the funding stream in REDD+ and the more claimants there are, the more the tenure system will be put to the test.

(b) *Participation of local population through FPIC and education*

Assuring that tenure systems will be robust requires maximum local stakeholder involvement through painstaking explanation of the project—yet education about the REDD+ project is being postponed at three sites in Brazil and three in Indonesia (Table 7). In most cases this is because proponents are experiencing implementation challenges and are hesitant to do outreach with local stakeholders until project aims are clearer. They want to avoid raising hopes unnecessarily. Harvey, Zerbock, Papageorgiou, and Parra (2010, p. 21) remark in their study of REDD+ project implementation: “One of the most commonly mentioned challenges has been how to clearly explain forest carbon initiatives to local stakeholders, how to articulate the potential benefits—and risks—for participants and how to manage stakeholder expectations.”

From one point of view postponement is innocent and unproblematic. It will happen when the time is right. But from another point of view there are potentially large problems. One problem is that two proponents delaying REDD+ education have already begun the FPIC process. These FPIC engagements have presumably not involved clear and thorough education on REDD+, and will have to be repeated at a later date when and if the proponent becomes confident enough with REDD+ to commit to it. But the education and FPIC process is in most cases quite costly and some proponents have put these activities on hold for lack of funds. It is easy to imagine that some proponents will not have sufficient funds to do thorough local education on REDD+ when the time comes to do so. Another problem is that when and if there is a policy breakthrough on REDD+, there is likely to be a surge of organizing momentum to get underway before pro-

ject funds dry up. Many pilot sites are on time-bound budgets of 3–5 years. One clear lesson from education and FPIC efforts so far is that it takes more time than expected to do them well. It is important that asymmetries of knowledge in REDD+ do not lead to the paternalistic modes of management that have plagued the forest sector in recent decades.

(c) *National action on tenure and integration of national and project efforts*

Our findings suggest that in some countries REDD+-related tenure challenges are being addressed on a “second-best” basis, well short of national tenure reform. Proponents are interacting at least to some degree with district and/or provincial or state government to achieve their purposes. Yet, overall, efforts to clarify forest tenure tend to be piecemeal and local, with little if any articulation to national strategies and action. This is a case in point of the observation made by Sikor *et al.* (2010) that “There are already too many examples where well-intended attempts to enhance forest people’s rights have gone awry because they failed to build in space for decision-making at local, national, and global scales and to link decision processes with each other.”

As mentioned earlier, Brazil is the place where land tenure regularization actions by proponents are in line with the national policy. Elsewhere, proponent organizations are acting mostly on their own in addressing local tenure problems (Table 7). By this we mean that they are doing such things as demarcating village and forest boundaries through mapping, developing spatial land use plans, identifying legal right holders, and taking various other steps to clarify and strengthen local forest tenure through their own initiative and with little external assistance. In a way, this stands to reason since these are pilot efforts operating within well-specified sub-national boundaries. Yet most proponents are experiencing a considerable mismatch between the tools applied and the size of the tenure challenge. These tenure challenges have deep roots in history, are national in scope, and have origins that often lie well beyond the boundary of the project site. The best remedies in many cases cannot be the piecemeal efforts at tenure clarification within the bounds of the project, but instead require wholesale, landscape-wide reform.

The character of proponent-government collaboration is highly uneven among countries. This is evident in the contrast between Brazil, where proponents tend to have a strong working relationship with the government in sorting out tenure issues, and Indonesia, where such collaboration is far more restricted. The potential benefits of collaboration are not just logistical (government can apply policy leverage the proponent cannot) but also financial. There can be considerable economies of scale in clarifying tenure at the level of the province/state or district rather than the project site.

5. CONCLUSIONS AND POLICY RECOMMENDATIONS

This paper has assessed the actions taken by REDD+ proponents to resolve tenure insecurity in light of what would be required for an effective and equitable REDD+. From one point of view, the actions are appropriate. The proponents all recognize that forest tenure insecurity for local people must be resolved in order for their project to fulfill its objectives. Accordingly, proponent organizations have mobilized substantial resources to address the issue. Yet on the whole, proponent actions as currently conceived and implemented risk

falling short of what is necessary and demonstrate a strong basis for concern. There is a subset of sites where tenure insecurity is likely to be persistent, if not intractable, due to high levels of contestation over control of forest lands by (mainly) external users. Proponents will in some cases be hard-pressed to successfully identify right holders, motivate responsibility, avert a resource rush, and assure that existing livelihoods and rights will not be compromised. These challenges are greater at sites where national conditions undermine the attainment of tenure security, where proponents tend to act in isolation, where REDD+ policy and market uncertainty¹⁴ induces postponement of REDD+ education, and where forests with high carbon content are likely to reveal weak tenure arrangements when REDD+ incentives are introduced.

Country-specific insights on capability to resolve tenure insecurity can be seen by joining village-level results and national data. Among the countries Indonesia is the most challenging because of its high rates of tenure insecurity, external forest use, and lack of success in excluding external users, and because of the government's relatively low commitment to addressing tenure issues at the local/community level and to integrate national and local tenure clarification efforts. Brazil and Cameroon demonstrate middle-level challenges at the level of the project site, but Brazil stands out among all country cases in its integration of national and local efforts to resolve tenure issues. Four of the five countries (Brazil, Cameroon, Tanzania, and to a certain extent Vietnam) are recognized for their policy efforts to formalize local tenure rights through community forestry, though in some of these countries this achievement is counter-balanced by deficiencies in implementation. In Indonesia and Vietnam in particular, national agencies are showing insufficient initiative to address community-level forest tenure issues.

Numerous challenges remain. These challenges primarily involve the massive complexity and scope of tenure problems in some national contexts, lack of clarity in where REDD+ is going and associated delays in involving local populations, and the fact that current project-scale preparations cannot adequately anticipate and incorporate the effects of REDD+ if and when it becomes reality. We propose four policy remedies to soften the blow of ill-preparedness when REDD+ conditional incentives are introduced.

(a) *National tenure action*

There are various kinds of actions at the national level that must be undertaken. The most urgent such actions are: (1) to improve the performance and scope of national as well as local REDD+ consultations; (2) to resolve statutory and customary claims on forest lands, as well as other forest tenure conflicts; (3) to incorporate local participatory mapping into national land tenure institutions and processes, and conversely, to make national and sub-national land data available to local stakeholders; (4) to enforce those aspects of national and local tenure laws and regulations that are pro-poor and pro-community and which tend to be ignored, such as rights of exclusion; and (5) to achieve legal clarity on forest carbon

ownership without side-stepping related forest land and tree tenure issues. Donor organizations can play an important role in supporting tenure clarification by earmarking REDD+ implementation funds specifically for this purpose. The costs of securing the tenure rights of local stakeholders is a relatively small fraction of the overall costs (administrative, implementation, and opportunity) of setting up REDD+ projects, making it a feasible policy priority (Hatcher, 2009).

(b) *Integrate national and local efforts*

Coordinated effort between proponent and government can facilitate effectiveness and efficiency in tenure clarification. The economies of scale in national-local coordination are particularly important in cases where proponents lack funds. Coordinated action between the proponent and government is also required to protect or compensate legitimate rights holders beyond village borders who depend on local forests for their livelihoods.

(c) *Clarify REDD+ policy*

International accords reached on REDD+ in the United Nations Conference of Parties (COP) in Cancun (2010), Durban (2011), and Doha (2012) were an important step toward setting REDD+ projects in motion, yet for various reasons there is still much inertia and lack of clarity. It is vital that the subsequent COPs provide clear policy and operational guidance for proponents, among other reasons to induce all proponents to fully engage with local stakeholders. We recognize that this recommendation is two-edged. Policy stagnation is a blessing and a curse. It is a blessing because it allows some proponents to take more time to resolve participation and tenure problems; it is a curse because it induces some proponents to postpone and curtail education and participation. On balance, we believe the benefits of policy clarity outweigh the risks.

(d) *Anticipate complications*

The tenure circumstances in some forests in the five countries are so grave that it is unlikely the actions proposed above can resolve the issues in a timely way before REDD+ gets underway. Almost all projects in the study are intending to introduce performance-based conditional REDD+ incentives in the period 2012–2014. This gives scant time to adequately address the serious problems identified in this study. Even Brazil projects, as advanced as they are in addressing tenure insecurity through government collaboration, may need more time to adequately resolve conflict issues. Robust conflict resolution and grievance mechanisms must be established. Equally important is to conduct visioning exercises that anticipate the consequences of inaction on forest tenure and that forecast where on the landscape tenure and equity problems are likely to surface when REDD+ is introduced on a wider scale. National tenure experts can construct scenarios starting from the assumption that REDD+, when scaled up, will often be implemented at potential flash points where disputes and lack of clarity about tenure are the norm.

NOTES

1. REDD+ incorporates a serious dilemma. On the one hand REDD+ proposes to reward those who threaten forests and agree to remove the threat. On the other hand, should not REDD+ also reward those actors who protect forests and present no threat?

2. Note that in REDD+ a resource rush can involve competition among stakeholders to become a right holder and to acquire legitimate access to the forest carbon revenue stream. This can involve appropriating forests by physical presence on the land, by becoming a claimant in the benefit sharing system, or both.

3. REDD+ must determine the legitimate holder not only of forest lands but also of forest carbon rights. In most countries where REDD+ is being established, this legal process is proceeding slowly. In some cases, legal tenure over forest carbon could be detached from rights to forest land and trees (Corbera, Estrada, May, Navarro, & Pacheco, 2011). However, in practice, if rights to carbon and forests are separated, this risks favoring those seeking to capture carbon rents, and might reduce benefits to local people (Sunderlin, Larson, & Cronkleton, 2009).
4. FPIC is a mechanism applied in development projects to assure “that indigenous peoples are not coerced or intimidated, that their consent is sought and freely given prior to the authorization or start of any activities, that they have full information about the scope and impacts of any proposed developments, and that ultimately their choices to give or withhold consent are respected” (Ward, 2011). Consultation with people affected by development is a relatively new process; meaningful stakeholder participation became mandatory in World Bank projects in 1992 (Goodland, 2004). FPIC is affirmed by the United Nations Declaration on the Rights of Indigenous Peoples, which was adopted in 2007. In the context of REDD+, proponents seek the consent of all local stakeholders, not just indigenous peoples. Proponents are motivated not just by law but also by industry standards and third party certification arrangements that require attention to local rights. Application of FPIC is justified in REDD+: because projects affect not just livelihoods, welfare, and income but also social order, identity, and culture; because local people are vulnerable to risks introduced by the “learning by doing” approach characteristic of REDD+; and because respect for rights is likely to determine the success of a REDD+ project (Anderson, 2011).
5. “Regularization is the process of bringing informal property rights into a formal, legal system of land administration. It usually includes the steps of adjudication, titling and land registration” (FAO, 2002).
6. Among the factors critical to effective forest governance in tropical forest countries are: “careful definition of user rights and responsibilities in forests, greater participation by those who use and depend on forests, downward and horizontal accountability of decision-makers, better monitoring of forest outcomes, stronger enforcement of property rights and governance arrangements, and investments in institutional capacities at local, regional, and national levels” (Agrawal, Chhatre, & Hardin, 2008).
7. GCS-REDD is also composed of Module 1, doing research on national REDD+ policies and processes, Module 3, doing research on carbon Monitoring, Reporting and Verification, and Module 4, which disseminates the research results.
8. There were two deviations. At the CED site in Cameroon there are only two villages in the whole project; at TFCG Kilosa five villages were selected.
9. In the three NGO-led projects studied in Brazil, proponents are working with the national and/or state agrarian reform agencies to officially document land ownership within the project area.
10. In Brazil, Cameroon, Indonesia, and Vietnam forest carbon density is in the range of 102–158 tons per hectare, whereas in Tanzania it is 42–48 tons per hectare (Saatchi et al. 2011).
11. In the moist forest region of Cameroon, human population density is five people per km² (Foahom, 2001) and in the Congo Basin Forest 14.5 people per km² (Congo Basin Forest Partnership, 2005). This contrasts to 30–45 people per km² in the dry forests and woodlands of western Africa (Shumba, Chidumayo, Gumbo, Kambole, & Chishaleshale, 2010).
12. We stress the hypothetical nature of this comparison, recognizing there are exceptions. For example, there can be strong carbon additionality even in REDD+ projects that have almost no forest. A project aiming at afforestation or reforestation in a barren area can generate substantial forest carbon benefits. However, this exception does not apply to our research because all the GCS REDD sites focus on avoided deforestation and degradation, not afforestation and reforestation.
13. In both Brazil and Indonesia in 2011, powerful entities wanting to convert large areas of forest to non-forest uses have exerted their leverage and are threatening to restrict the scope of REDD+. In Brazil, the powerful farming lobby pressured parliament to loosen the provisions of the Forest Code, which requires right holders of forest lands to keep a minimum area of forest standing (Vidal & Carrington, 2012). In Indonesia, large areas of forest already targeted for conversion to non-forest uses through concession license applications are being exempted from a presidential decree mandating a moratorium on deforestation and degradation (Murdiyarto, Dewi, Lawrence, & Seymour, 2011). This means essentially that, if REDD+ is to be successful, the flow of national benefits it produces will have to outperform and outbid the funds generated by “business as usual” investments that lead to forest conversion.
14. At the time of this writing, the United Nations Framework Convention on Climate Change has yet to create a rigorous guiding framework for the implementation of REDD+, and there does not yet exist a robust and stable market for forest carbon.

REFERENCES

- Agrawal, A., Chhatre, A., & Hardin, R. (2008). Changing governance of the world's forests. *Science*, 320, 1460–1462.
- Aldrich, S., Walker, R., Simmons, C., Caldas, M., & Perz, S. (2012). Contentious land change in the Amazon's arc of deforestation. *Annals of the Association of American Geographers*, 102, 103–128.
- Alley, P. (2011). Corruption: A root cause of deforestation and forest degradation. In G. Sweeney, R. Dobson, K. Despota, & D. Zinnbauer (Eds.), *Global corruption report: Climate change extract – Forestry governance* (pp. 299–311). Transparency International.
- Anderson, P. (2011). *Free, prior, and informed consent in REDD+: Principles and approaches for policy and project development*. Bangkok, Thailand: Center for People and Forests.
- Banjade, M. R., & Paudel, N. S. (2008). *Improving equity and livelihoods in community forestry: Suspa community forest users group, Dokakha, Bogor, Indonesia, Kathmandu, Nepal*: Center for International Forestry Research, Forest Action.
- Barr, C. (2011). Governance risks for REDD+: How weak forest carbon accounting can create opportunities for corruption and fraud. In G. Sweeney, R. Dobson, K. Despota, & D. Zinnbauer (Eds.), *Global corruption report: Climate change extract – Forestry governance* (pp. 329–344). Transparency International.
- CCBA (2008). *Climate, community and biodiversity project design standards* (2nd ed.). Climate, Community & Biodiversity Alliance.
- CCBA & CARE (2010). *REDD+ social & environmental standards. Version 1, June 2010*. Climate, Community & Biodiversity Alliance and CARE.
- Congo Basin Forest Partnership (2005). *The forests of the Congo basin: A preliminary assessment*. Congo Basin Forest Partnership.
- Corbera, E., Estrada, M., May, P., Navarro, G., & Pacheco, P. (2011). Rights to forests and carbon: Insights from Mexico, Brazil and Costa Rica. *Forests*, 2, 301–342.
- Cotula, L. (2011). *The outlook on farmland acquisitions*. Rome, Italy: International Land Coalition.
- Dahal, G. R., Atkinson, J., & Bampton, J. (2011). *Forest tenure in Asia: Status and trends*. Kuala Lumpur, Malaysia: EU FLEGT Facility.
- Deininger, K. (2003). *Land policies for growth and poverty reduction*. Washington, DC, USA: World Bank and Oxford University Press.

- DFID (2007). *Land: Better access and secure tenure for poor people*. London, UK: Department for International Development.
- Dix, S. (2011). Hypothetical offsets: Carbon trading and land rights in Papua New Guinea. In G. Sweeney, R. Dobson, K. Despot, & D. Zinnbauer (Eds.), *Global corruption report: Climate change extract – Forestry governance* (pp. 345–346). Transparency International.
- Doherty, E., & Schroeder, H. (2011). Forest tenure and multi-level governance in avoiding deforestation under REDD+. *Global Environmental Politics*, 11(4), 66–88.
- Duchelle, A. E., Cromberg, M., Gebara, M. F., Guerra, R., Melo, T., Larson, A., Cronkleton, P., et al. (2013). Linking forest tenure reform, environmental compliance and incentives: Lessons from REDD+ initiatives in the Brazilian Amazon. In: L. Naughton-Treves, Alex-Garcia, J., Baird, I.G., Turner, M.D., & K. Wendland (Eds.), *Land Tenure and Forest Carbon Management*. Special Section. *World Development*, this issue. <http://dx.doi.org/10.1016/j.worlddev.2013.01.010>.
- Eliasch, J. (2008). *Climate change: Financing global forests. The Eliasch review*. London, UK: Office of Climate Change.
- Ellsworth, L., & White, A. (2004). *Deeper roots: Strengthening community tenure security and community livelihoods*. New York, USA: Ford Foundation.
- FAO (2002). *Land tenure and rural development*. FAO Land Tenure Studies 3. Rome, Italy: Food and Agriculture Organization of the United Nations.
- FAO (2011). *Reforming forest tenure: Issues, principles and process*. FAO Paper 165. Rome, Italy: Food and Agriculture Organization of the United Nations.
- FAO & ITTO. (2009). *Forest governance and climate change mitigation. Policy brief*. Rome, Italy: Food and Agriculture Organization of the United Nations. Yokohama, Japan: International Tropical Timber Organization.
- Foahom, B. (2001). Integrating biodiversity into the forestry sector: Cameroon case study. Paper for workshop on “Integration of Biodiversity in National Forestry Planning Programme”, August 13–16. Bogor, Indonesia: Center for International Forestry Research.
- Gibbs, H. K., Johnston, M., Foley, J. A., Holloway, T., Monfreda, C., Ramankutty, N., et al. (2008). Carbon payback times for crop-based biofuel expansion in the tropics: The effects of changing yield and technology. *Environmental Research Letters*. <http://dx.doi.org/10.1088/1748-9326/3/3/034001>. Date accessed: August 7, 2012.
- Goodland, R. (2004). Free, prior and informed consent and the World Bank group. *Sustainable Development Law and Policy*, 4(2), 66–74.
- Harvey, C. A., Zerbock, O., Papageorgiou, S., & Parra, A. (2010). *What is needed to make REDD+ work on the ground?: Lessons learned from pilot forest carbon initiatives*. Arlington, Virginia, USA: Conservation International.
- Hatcher, J. (2009). *Securing tenure rights and reducing emissions from deforestation and degradation (REDD): Costs and lessons learned*. Social Development Papers. Paper No. 120. Washington DC, USA: World Bank.
- Holland, M. B., Koning, F.d., Morales, M., Naughton-Treves, L., Robinson, B., & Suárez, L. (2013). Complex tenure and deforestation: Implications for conservation incentives in the Ecuadorian Amazon. In: L. Naughton-Treves, J. Alex-Garcia, I. G. Baird, M. D. Turner, & K. Wendland (Eds.), *Land Tenure and Forest Carbon Management*. Special Section. *World Development*, this issue. <http://dx.doi.org/10.1016/j.worlddev.2013.01.010>.
- Jagger, P., Sills, E. O., Lawlor, K., & Sunderlin, W. D. (2010). *A guide to learning about livelihood impacts of REDD+*. Occasional Paper No. 56. Bogor, Indonesia: Center for International Forestry Research.
- Larson, A. (2010). Making the ‘rules of the game’: Constituting territory and authority in Nicaragua’s indigenous communities. *Land Use Policy*, 27, 1143–1152.
- Larson, A., Barry, D., & Dahal, G. R. (2010). New rights for forest based communities: Understanding processes of forest tenure reform. *International Forestry Review*, 12(1), 78–96.
- Larson, A., Barry, D., Dahal, G. R., & Colfer, C. J. P. (Eds.) (2010). *Forests for people: Community rights and forest tenure reform*. London, UK: Earthscan.
- Larson, A., & Petkova, E. (2011). An introduction to forest governance, people and REDD+ in Latin America: Synergies and opportunities. *Forests*, 2(4), 86–111.
- Murdiyarmo, D., Dewi, S., Lawrence, D. & Seymour, F. (2011). *Indonesia’s forest moratorium: A stepping stone to better forest governance?* Working Paper 76. Bogor, Indonesia: Center for International Forestry Research.
- Oyono, P. R., Ribot, J. C. & Larson, A. M. (2006). *Green and black gold in rural Cameroon: Natural resources for local governance, justice and sustainability*. Working Paper #22. Washington, DC, USA: World Resources Institute.
- Resosudarmo, I. A. P., Atmadja, S., Ekaputri, A. D., Intarini, D. Y., Indriatmoko, Y., & Astri, P. (2013). Does tenure security lead to REDD+ Project effectiveness? Reflections from five emerging sites in Indonesia. In: L. Naughton-Treves, J. Alex-Garcia, I. G. Baird, M. D. Turner, & K. Wendland (Eds.), *Land Tenure and Forest Carbon Management*. Special Section. *World Development*, this issue. <http://dx.doi.org/10.1016/j.worlddev.2013.01.010>.
- RRI (2008). *Seeing people through the trees: Scaling up efforts to advance rights and address poverty, conflict and climate change*. Washington, DC, USA: Rights and Resources Initiative.
- RRI (2012a). *What rights?: A comparative analysis of developing countries’ national legislation on community and indigenous peoples’ forest tenure rights*. Washington DC, USA: Rights and Resources Initiative.
- RRI (2012b). *Turning point: What future for forest peoples and resources in the emerging world order?*. Washington DC, USA: Rights and Resources Initiative.
- RRI & ITTO. (2011). *Tropical forest tenure assessment: Trends, challenges and opportunities*. Washington, DC, USA: Rights and Resources Initiative. Yokohama, Japan: International Tropical Timber Organization.
- Saatchi, S. S., Harris, N. L., Brown, S., Lefsky, M., Mitchard, E. T. A., & Salas, W., et al. (2011). Benchmark map of forest carbon stocks in tropical regions across three continents. *PNAS Early Edition*. <www.pnas.org/cgi/doi/10.1073/pnas.1019576108> Accessed August 7, 2012.
- Schmink, M., & Wood, C. (1992). *Contested frontiers in Amazonia*. New York, USA: Columbia University Press.
- Shumba, E., Chidumayo, E., Gumbo, D., Kambole, C., & Chishshaleshale, M. (2010). Biodiversity of plants. In E. N. Chidumayo, & D. J. Gumbo (Eds.), *The dry forests and woodlands of Africa: Managing for products and services* (pp. 43–61). London, UK & Washington, DC, USA: Earthscan.
- SIDA (2007). *Natural resource tenure. A position paper for SIDA*. Stockholm, Sweden: Swedish International Development Cooperation Agency.
- Sikor, T., Stahl, J., Enters, T., Ribot, J. C., Singh, N., Sunderlin, W. D., et al. (2010). Editorial: REDD-plus, forest people’s rights and nested climate governance. *Global Environmental Change*, 20(3), 423–425.
- Smith, P., Gregory, P. J., van Vuuren, D., Obersteiner, M., Havlík, P., Rounsevell, M., et al. (2010). Competition for land. *Philosophical Transactions of the Royal Society*, 365, 2941–2957.
- Sparovek, G., Berndes, G., de Oliveira Pereira Barretto, A. G., & Fröhlich Klug, I. L. (2012). The revision of the Brazilian Forest Act: Increased deforestation or a historic step towards balancing agricultural development and nature conservation?. *Environmental Science and Policy*, 16, 65–72.
- Stern, N. (2006). *Stern review: The economics of climate change*. Cambridge, UK: Cambridge University Press.
- Sunderlin, W. D., & Atmadja, S. (2009). Is REDD+ an idea whose time has come, or gone?. In A. Angelsen (Ed.), *Realising REDD+: National strategy and policy options* (pp. 45–53). Bogor, Indonesia: Center for International Forestry Research.
- Sunderlin, W. D., Hatcher, J., & Liddle, M. (2008). *From exclusion to ownership?: Challenges and opportunities in advancing forest tenure reform*. Washington, DC, USA: Rights and Resources Initiative.
- Sunderlin, W. D., Larson, A. M., & Cronkleton, P. (2009). Forest tenure rights and REDD+: From inertia to policy solutions. In A. Angelsen (Ed.), *Realising REDD+: National strategy and policy options* (pp. 139–149). Bogor, Indonesia: Center for International Forestry Research.
- Sunderlin, W. D., Larson, A. M., Duchelle, A., Sills, E. O., Luttrell, C., Jagger, P., et al. (2010). *Technical guidelines for research on REDD+ project sites*. Bogor, Indonesia: Center for International Forestry Research.
- Tacconi, L., Downs, F., & Larmour, P. (2009). Anti-corruption policies in the forest sector and REDD+. In A. Angelsen (Ed.), *Realising REDD+: National strategy and policy options* (pp. 163–174). Bogor, Indonesia: Center for International Forestry Research.

- Vidal, J., & Carrington, D. (2012). Petition calls on Brazilian president to veto 'catastrophic' forest code. *The Guardian*. <<http://www.guardian.co.uk/environment/2012/may/11/petition-brazil-president-veto-forest-code>> Accessed July 28, 2012.
- Ward, T. (2011). The right to free, prior, and informed consent: Indigenous peoples' participation rights within international law. *Northwestern Journal of International Human Rights*, 10(2), 54–84.
- Wertz-Kanounnikoff, S., & Angelsen, A. (2009). Global and national REDD+ architecture: Linking institutions and actions. In A. Angelsen (Ed.), *Realising REDD+: National strategy and policy options* (pp. 13–24). Bogor, Indonesia: Center for International Forestry Research.
- Westholm, L., Biddulph, R., Hellmark, I., & Ekbo, A. (2011). *REDD+ and tenure: A review of the latest developments in research, implementation and debate*. Focali report 2011:02. Gothenberg, Sweden: University of Gothenberg.
- White, A., & Martin, A. (2002). *Who owns the world's forests?: Forest tenure and public forests in transition*. Washington, DC, USA: Forest Trends, Center for International Environmental Law.
- World Bank. (2006). *Strengthening forest law enforcement and governance addressing a systemic constraint to sustainable development*. Report No. 36638-GLB. Washington DC, USA: World Bank.
- World Bank (2010). *Rising global interest in farmland: Can it yield sustainable and equitable benefits?*. Washington, DC, USA: World Bank.
- Wunder, S. (2009). Can payments for environmental services reduce deforestation and forest degradation?. In A. Angelsen (Ed.), *Realising REDD+: National strategy and policy options* (pp. 213–223). Bogor, Indonesia: Center for International Forestry Research.

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