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Land Tenure and Tropical Forest Carbon Management

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Summary. — This essay introduces five papers investigating land tenure issues related to conserving tropical forests via incentive-based strategies (e.g., PES, REDD+). After briefly reviewing key terms and concepts, we point to important contributions from the papers regarding (a) a deeper theoretical and empirical understanding of the relationship between land tenure and forest outcomes, and (b) policy lessons from early efforts to address tenure in sites targeted for forest carbon projects.

Key words — tropical forest, land tenure, deforestation, carbon, property rights

1. INTRODUCTION

The world's most carbon-rich and biodiverse forests are found in regions of the tropics where land ownership is often ill-defined, contested, or insecure. This uncertainty presents a challenge for forest carbon management and in particular for payments for ecosystem services (PES): a new wave of incentive-based policy instruments that aims to safeguard public goods found in forests (such as carbon, water, and biodiversity) by valuing the goods and services they provide and creating economic incentives for their protection (Engel, Pagiola, & Wunder, 2008). In PES programs, property rights tied to tracts of land directly determine who is eligible to receive economic incentives and the security of property rights determines whether sellers can enforce contracts (Sikor *et al.*, 2010; Sunderlin, Larson, & Cronkleton, 2009; Unruh, 2008). Ultimately, land tenure and its distribution are key factors determining whether incentive-based conservation approaches will be more effective than past conservation efforts, and whether they will prove equitable for forest-dependent peoples (Bruce, Wendland, & Naughton-Treves, 2010; Cotula & Mayers, 2009; Larson, 2011; Phelps, Webb, & Agrawal, 2010; Sikor *et al.*, 2010; Sunderlin *et al.*, 2009; Unruh, 2008).

A primary focus of incentive-based forest conservation initiatives in the tropics is the management of greenhouse gases as a means to mitigate climate change. The most recent and highest profile climate initiative, REDD+ (Reducing Emissions from Deforestation and Degradation [1]), is attracting significant international attention, with more than 40 countries across Africa, Asia–Pacific, Latin America, and the Caribbean advancing REDD+ projects with billions of U.S. dollars pledged (Angelsen *et al.*, 2009). REDD+ initiatives often combine several conservation management approaches, including forest access restrictions, livelihood support, and incentive-based approaches such as PES (Sunderlin & Sills, 2012). Despite international recognition that tenure is a key issue in these approaches, REDD+ policies and safeguards offer few guidelines for tenure-oriented interventions (Westholm, Biddulph, Hellmark, & Ekbom, 2011). This gap is not surprising given that land tenure interventions have often proven politically fraught, uncertain processes that can require many years (Deininger & Feder, 2009; Sikor & Muller, 2009). Identifying clear policy and best practices for tenure and forest carbon management is also difficult given our limited understanding of the complex relationship between land tenure and forest outcomes (Arnot, Luckert, & Boxall, 2011; Pfaff *et al.*, 2010; Robinson, Holland, & Naughton-Treves, 2011). Yet engaging with tenure issues is necessary for PES- and non-PES strategies under REDD+ to be fair and effective. Beyond these specific initiatives, addressing tenure can help strengthen forest governance and improve prospects for forest conservation.

To advance scholarship and policy dialog on issues of land tenure and tropical forest carbon management, the Land Tenure Center of the University of Wisconsin, Madison hosted an international workshop in October 2011 with support from the USAID TransLinks program. This special section showcases five workshop papers that shed light on the theoretical and empirical relationships between land tenure, property rights, and forest carbon management in the tropics. Although it is too early to fully evaluate the impacts of incentive-based programs on forest carbon and forest-dependent peoples, papers in this special section provide critical guidance on (a) the theoretical and empirical relationship between land tenure and forest outcomes and (b) the on-the-ground realities of clarifying and securing land tenure within REDD+ pilot projects. Several recent papers have raised concerns about the potential recentralization of rights from implementing forest carbon projects amidst poorly defined and insecure land tenure and property rights systems (Marino & Ribot, 2012; Phelps *et al.*, 2010; Sandbrook, Nelson, & Agrawal, 2010; Sikor

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et al., 2010). The present set of papers do not take a single position on this issue, rather, the analyses reveal significant risk as well as possible benefits for forests and forest-dependent peoples associated with implementing REDD+ or other incentive-based programs in areas where land tenure is contested or unclear.

2. DEFINING KEY TERMS AND CONCEPTS

Land tenure and property rights are complex and dynamic concepts, and are often conceptualized differently across disciplines. While the terms "land tenure" and "property rights" are often used interchangeably, here we use land tenure to refer to the full set of institutions and policies that determine how the land and its resources are accessed, who can hold and use these resources, for how long, and under what conditions (Bruce *et al.*, 2010; USAID, 2008). Land tenure therefore includes the broader collection of rights associated with the land and the institutions that uphold those rights. Meanwhile, property rights are the products of rules, as mediated by formal and informal institutions, which liberate and constrain human action (Bromley, 2006). They liberate by authorizing an individual or collective to undertake particular actions, while at the same time constraining someone else to observe this right (Bromley, 2006). Property is not the physical object itself, but an entitlement to the value or "stream of benefits" associated with having control rights over an object whether it is land, trees, or carbon. While this value is often conceptualized in monetary terms, it does not have to be, and there are many examples of high social, cultural, and political values associated with land, particularly among indigenous peoples (Platteau, 2000). The term "property rights" brings together the concepts of rights and duties related to the control of objects that deliver a stream of future benefits.

Property is often described according to the entity that exercises rights over the object, for example: public, private, common, or non-property (Bromley, 1989). There are obvious limitations in categorizing property in this way, however, since different types of rights associated with property can belong to different entities—a situation commonplace in tropical forest regions. A more useful framework is to conceptualize property as a "bundle of rights" (Schlager & Ostrom, 1992). One way to categorize this "bundle of rights" is as follows: (a) *use rights*, which include the right to access the resource and withdrawal from the resource; (b) *decision-making rights*, which include the right to manage the resource and to exclude others from accessing the resource; and (c) *alienation rights*, which include the right to sell or lease the resource. While the full set of property rights can be held by public, private, or community entities, it is often the case that an entity holds only a subset of the property rights listed above.

In most tropical countries the state typically holds administration rights to forests (RRI, 2012; Sunderlin, Hatcher, & Liddle, 2008; White & Martin, 2002). Over the last few decades there has been an increase in the formal devolution of use and decision-making rights, and in some cases alienation rights, to individuals and community groups (Agrawal, Chhatre, & Hardin, 2008; FAO, 2011; Sunderlin *et al.*, 2008). The rate at which the distribution of rights is changing varies across continents—with Latin American countries tending to show a higher incidence of formal allocation of rights to private and communal groups and Africa the least (RRI, 2012). In the African context it is especially important to recognize that the relatively low percent of formal rights designated to local people belies the high number of persons dependent on state-owned lands for their livelihoods (FAO, 2011; Sunderlin *et al.*, 2008).

The issue of formal *versus* informal rights brings up an important characteristic of land tenure systems and one that confounds simple models of a clear forest "owner": there are often overlapping sources of authority that define property rights (Meinzen-Dick, Pradhan, & Di Gregorio, 2004). Because different legal systems, formal and informal, can coexist in one polity (a situation known as "legal pluralism") a right in property can arise from either formal, codified laws or informal, customary systems; the latter may or may not be recognized in formal law. In large swaths of forests in the tropics, there is overlap in these different legal systems. It is important to keep in mind that a land tenure system is specific to the social, economic, and cultural context in which it arises. It may contain different types of rights—use, decision-making, and alienation—for different user groups—public, private, and communal—across different resources—trees, water, and crops. For example, a communal land tenure system may include private use rights to farms and community use rights to forests, without clear attribution of alienation rights (Bruce *et al.*, 2010).

In the case of formal, legally defined property rights, the right-holder in principle has the power to compel the state to enforce that right (Bromley, 2006). This suggests that there is legal apparatus and political will to enforce the right, but in many tropical countries systems to administer these rights and the political will to do so simply do not exist (RRI, 2012). This has led to distinction among scholars between the *form*, or content, of land tenure and the *security* of land tenure. The security of land tenure refers to the assurance that property rights will be upheld by society. Security does not refer to the duration, marketability, or the breadth of rights over a piece of land; these are all components of a particular form of tenure as described above (Sjaastad & Bromley, 2000; van den Brink, Binswanger, Bruce, Byamugisha, & Thomas, 2006). Moreover, the way land tenure is formally codified is often less important to land use decisions than how individuals perceive the security of their rights, particularly in remote tropical regions (Arnot *et al.*, 2011; Broegaard, 2005). In sum, formal rights are not necessarily more secure than informal rights in many forested areas where the effective presence of the state to enforce formal rights is weak.

3. LAND TENURE AND FOREST CARBON MANAGEMENT: LESSONS FOR THEORY AND PRACTICE

(a) *Land tenure and forest outcomes*

A primary goal of incentive-based forest conservation programs is to target areas with high probability of deforestation so additional carbon sequestration benefits are gained. Achieving this additionality in ecosystem services requires a clear understanding of the drivers of deforestation, which are complex and context-specific (Geist & Lambin, 2002). Many land cover change analyses use land tenure as a predictor of land cover change (see Angelsen & Kaimowitz, 1999; Robinson *et al.*, 2011), and more recently, targeting of conservation programs such as PES have relied on statistical estimates of the drivers of land use change, some of which include tenure as an explanatory variable (Wendland *et al.*, 2010a; Wunscher & Engel, 2012). Information on the local relationship between tenure and deforestation can thus affect calculations of avoided deforestation, carbon baselines, and ultimately who is compensated in performance-based incentive systems.