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Securing Tenure Rights and Reducing Emissions from Deforestation and Degradation (REDD)

Costs and Lessons Learned

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Introduction

The world's decision-makers are paying attention to forests as almost never before. Deforestation accounts for approximately 17% of the global greenhouse gas emissions, which is more than the transport or agriculture sectors (IPCC, 2007:36). While the Kyoto Protocol recognizes the vital role forests play in maintaining healthy ecosystems and mitigating climate change it did not provide a robust framework to include forests in global mitigation responses (UN, 1998). Harnessing the carbon sequestration capacity of forests is now seen to be a major policy element of the next global commitment to mitigate global climate change. International schemes to compensate for reduced emissions from deforestation and degradation (REDD) are being drawn up.¹ While proposed by some as a lower cost solution to combat climate change (Stern, 2008:217), it is perceived by others as a highly costly endeavor with unpredictable results for the climate and forest peoples of the world (Accra Caucus, 2008).

Complex webs of social, economic and geographic factors drive deforestation and forest degradation (Kaimowitz and Angelsen, 1998). It is clear to many, however, that insecure² forest tenure³ is a key factor in deforestation and forest degradation in many of the world's forests (Eliasch, 2008; RRI, 2008). Worldwide, communities are the legally recognized owners of approximately 350 Mha of forest lands – approximately 9% of the world's forests, and 76 Mha of forest land are designated for use by communities (Sunderlin et al., 2008:8), which together contain between 77 and 145GtCO₂e.⁴ Yet, much of the rest of the world's forests are under contested ownership claims.

In response to the contested ownership of many of the world's forest, a diverse set of people and institutions have begun or renewed calling for clarifying, recognizing and securing tenure rights with more urgency and speed in the face of climate change and REDD.⁵ Indigenous Peoples, civil society organizations and rights advocates argue that recognizing the rights of forest communities to their forest land is an issue of social justice and equity. The private sector and intergovernmental organizations recognize that clear tenure rights are fundamental to secure and predicable transactions needed to compensate for the opportunity costs of reducing emissions from deforestation and degradation.

Despite the calls to address forest tenure and the contestation in forest areas there is relatively limited operationally oriented analysis in the discussions around REDD to inform scaling-up tenure recognition.

¹ The acronym REDD signifies an internationally developed and nationally implemented scheme to compensate forest owners for their lost income from stopping activities that emit forest carbon. While pilot REDD projects are being piloted, no global system exists today. Several international REDD initiatives have been created. For example, the World Bank Forest Carbon Partnership (FCPF) is designed to facilitate the creation of a forest carbon market that would raise the necessary funds to pay for REDD. The UN-REDD Programme, co-coordinated by FAO, UNDP and UNEP, will begin piloting REDD programs in nine countries. Other national initiatives like Norway's International Climate and Forest Initiative have also been created to develop the technical capacities and international financing for needed for REDD.

² While highly context-dependent and qualitative, natural resource tenure insecurity can be understood as the condition wherein users and holders of land and natural resources consider their rights to land and natural resources to be at risk and uncertain in duration (adapted from FAO, 2003:76). Conversely, natural resource tenure security can be understood as the condition wherein the user of the resource has confidence that they will be able to use the resource without arbitrary restrictions or expulsion for a pre-determined period of time or in perpetuity.

³ Tenure can best be understood as the bundle of rights (the rights to access, use, manage, exclude and alienate) of people and groups to resources.

⁴ Author's calculation based on calculations overlaying the tenure distribution by country from Sunderlin et al. 2008a with the carbon stocks per county found in Gibbs et al. 2007:6 and the total forest area of each country found in FAO 2006.

⁵ See for example: Accra Caucus (2008:1), CAN (2009:1), Tebtebba (2008:2), UNPFII (2008:1) Eliasch (2008:193), Government of Norway (2008:1), UNFCCC (2006:17), UNFCCC (2009:11) and Government of Belize et al (2008:1).

This paper attempts to contribute to the discussion of scaling-up the recognition of tenure rights within the efforts to reduce forest carbon emissions and to put the costs of recognizing tenure rights in a broader perspective. It is organized into three sections: first, an examination of the role of tenure in reducing forest carbon emissions and enhancing carbon sequestration capacities; second, an overview of lessons learned from legally recognizing customary tenure rights, and; third, an analysis of the costs of recognizing tenure and the projected costs of an international REDD scheme. Since it is increasingly clear that addressing tenure will be a necessary component of successfully implementing REDD programs (Cotula and Mayers, 2009; Meridian Institute, 2009; Gong et al, forthcoming⁶) the analysis of the costs of recognizing tenure rights and the costs for REDD schemes put forth below will hopefully be useful in informing international and national policy decisions and prioritizing actions aiming to reduce emissions from deforestation and degradation.

⁶ Gong et al. (forthcoming) highlight the problematic implementation of Clean Development Mechanism (CDM) forest project in areas with unclear tenure.

1. The Role of Forest Tenure in Reducing Forest Carbon Emissions and Enhancing Carbon Sequestration Capacities

Insecure land tenure in forest areas is a known, but difficult to quantify, driver of land use changes leading to deforestation and forest degradation. Many analysts have noted that forest communities and households with secure land tenure have an increased incentive to maintain and protect their forests and that those without secure tenure do not (World Bank, 2007:29; FAO, 2002; Sunderlin et al., 2008:3). While many argue that local full legal ownership of forests is preferable to secure use and management rights for a number of reasons (RRI, 2008)⁷, a series of examples of different ownership and management regimes are presented below to illustrate how secure tenure rights (in varying cases, to access, use, manage and exclude) can have positive effects on forest condition and thereby reducing forest carbon emissions and enhancing carbon sequestration capacities.

The general understanding that secure community forest tenure can lead to successful forest conservation and carbon management is increasingly being supported by empirical analysis. Communities are estimated to invest between \$1.3 and \$2.6 billion of their income in forest conservation activities each year (Molnar et al, 2003). Indigenous peoples living in a demarcated *terras indigenas* in the Brazilian Amazon have proven to be very effective at reducing carbon emissions from forest fires (Nepstad et al., 2006). Maps produced by the Instituto Socio Ambiental (ISA) document the strikingly lower rates of deforestation in *terras indigenas* as compared to areas outside of the reserve.

In one of the most robust studies available on the role of community-owned forests in carbon sequestration with data from 325 sites in 12 countries covering 594 user groups and 211 forest associations, Agrawal (2008) shows that the larger the forest area under community ownership the higher the probability for better biodiversity maintenance, community livelihoods and carbon sequestration. Xu et al. (forthcoming) and Hyde et al. (2003) note the increased reforestation and improved forest cover in China in areas where communities and households were granted more authority and choice over forest management. The meta-review of 69 studies of community managed forests conducted by Pagdee et al (2006:51) found clear evidence that secure land tenure is a key to successful community forestry projects (success is defined by the review as improved ecological sustainability, social equity and economic efficiency). Suyanto et al (2001) highlight the use of forest fires in tenure conflicts between local communities in Lampung-Sumatra with no legal tenure recognition and the Indonesian Forestry Department and conclude that:

“Clear land ownership and community involvement in managing forests are key determinants in having a better environment and sustainable land management. [The study] demonstrates the failure of past forest policy and management, when the local

⁷ RRI (2008:21) makes the following case for full private ownership: “Private rights are much more secure because they are less easily controlled or expropriated by governments or more powerful actors. Communities that hold private rights have more leverage when negotiating with governments or outside investors than those communities with long-term access rights to publicly held land. The importance of this distinction is growing quickly with the rise of markets for ecosystem services and schemes to sequester carbon. Communities with private land rights have much stronger claims to the benefits of these potential markets, and much stronger protections against exploitation, than communities that only have access rights to public lands.”

communities are not involved and military force is used to conserve the forests. In contrast, with less government involvement but more secure land rights (as perceived by farmers), local communities have successfully rehabilitated degraded land located in state forestland, thereby creating a better environment with local and global benefits.”

In Nepal, registered community forest user groups (CFUG), which enjoy secured and protected long-term tenure rights to 25% of Nepalese forests, have shown to be effective in restoring forest areas and maintaining deforestation rates well below the national deforestation rates. The yearly deforestation rate in government administered forests is approximately 1.5% while it is 0.88% in community forest areas (Khanal 2009). Kanel (2004:5,6-8) summarizes the successes of the CFUGs as follows:

“About 1.1 million hectares of forested land (25 percent of the total) has so far been handed over to over 13,000 CFUGs which constitute 35 percent of the total population of Nepal. Denuded forested areas have regenerated, the condition of forest has improved, and the level of forest extraction is decided by the users themselves.”

Skutsch and her colleagues (2008) find that community managed forests in dry forest/savanna woodland and in temperate and montane forests successfully avoid degradation thus saving 1.5-3.5 tCO₂e/ha per year. They also find that community managed forests also sequester an additional 1.5 – 5.5 tCO₂e/ha per year in dry forest/savanna woodland and 5.5-11.0 tCO₂e/ha per year by forest enhancement.

Apart from the positive effects that recognizing forest community tenure can have on carbon sequestration, the absence of secure tenure rights can have a negative effect of forest cover and quality. Insecure, unclear and unrecognized community tenure rights can lead to conflicts and deforestation as the forests are exploited for short-term gains (De Koning et al 2008). Additionally, there are reports of forest clearing to preemptively assert their rights and head off competing claims (Kaimowitz and Anglesen, 1998:94). The extent of community rights is also a determinant in their ability and incentive to maintain forest areas. Tanzania’s Joint Forest Management (JFM) areas are home to higher deforestation rates than areas under Participatory Forest Management (PFM) (Meshack 2009). The PFM regime confers much stronger rights to communities than the JFM program, and it provides a clear legal basis for communities, groups or individuals to own and manage forests.

Related to the point above cases like Papua New Guinea, where traditional communities legally own 99% of the country’s forest areas (Sunderlin et al., 2008:8) and yet there is deforestation and degradation rate, provide cause for caution. The deforestation and degradation in Papua New Guinea is largely due to large-scale industrial timber logging (Shearman, et al., 2008:7). While communities have legal ownership of their forests, the decision making power to allocate concessions remains with the central government, thus restricting the communities’ full exercise of their tenure rights (Forest Trends, 2005). Moreover, they do not have the power to exclude industrial logging operations from their lands. Similarly, in Peru many communities have received legal title to forest land, but the ownership rights do not extend to sub-soil rights and cannot therefore exclude potentially deforesting activities (Sunderlin et al., 2008: 16).

Moreover, recognizing and securing community tenure rights can have multiple co-benefits for governments, communities and individuals beyond improved forest condition and reduced deforestation. Increased recognition of community tenure and management rights also implies increased responsibilities placed upon the communities which can free up state resources. Clarified and secure tenure can lead to increased sense of personal security, preservation of cultural identities, and reduced or mitigated conflicts over resources (Sunderlin et al 2008:3). Other co-benefits such as increased investment in community development, poverty reduction activities and capacity-building, are linked to increased income communities derived through community forestry (ForestAction, 2008:2). Though pointing out some questions over intra-community distribution, Kanel (2005:6) provides an example of the revenue generated by community forestry which is then invested in community welfare programs:

“The total annual budget of the [Nepalese] Department of Forest was about Rs680 million and the annual income of the department was about Rs550 million in 2002. However, community forest covers only about 25% of the total national forest, but generates more than Rs740 million per year.”

While forest communities and individuals are also capable of making poor environmental choices, the cases presented above lend empirical credence to the notion that with the right institutional setting, incentives and rules forest communities with secure tenure are capable and likely to reduce forest carbon emissions and enhance carbon sequestration capacities.

2. Recognizing Rights: Lessons from Implementation

Here, the term ‘recognizing rights’ is used as shorthand to mean the process by which central and provincial governments cede claims of forest ownership and management rights to those communities and households that have historically used and occupied forested lands. Resource rights are almost always contested, and initiatives to legally recognize resource ownership are often highly political with context specific complications and complexities. If governments do respond to the calls to recognize tenure rights in the context of REDD, learning from the history of similar efforts can help ensure that their actions are more successful and equitable.

The recognition of tenure rights can also include the recognition of the customary land tenure systems in the area, thereby retaining the flexibility and capacity to adapt that often gives these systems their power (Cotula, 2007:7). However, doing so raises difficult to answer questions of representation, elite capture, authority, inequity and legitimacy in cases where customary authorities are granted (and sometime abuse) statutory legal powers (witness Ghana (Ubink, 2008) and South Africa (Claasens, 2008:109) among others). Moreover, the realization of forest peoples’ rights cannot solely on the recognition of ownership and control over a geographical area, but it often requires a suite of complementary reforms to governance systems, markets for timber and non-timber forest products, regulatory structures, judicial systems, and efforts to strengthen individual human rights (Colchester, 2008; White and Elsworth, 2004).

There are many critiques of notion that recognizing tenure rights through titling programs alone can provide tenure security (e.g. Smucker et al., 2002). The general conclusion is that while titling or registration is often a needed legal step, true security is a product of several social, cultural and political forces (Ellsworth and White, 2004). Meinzen-Dick and Mwangi (2008) note just some of the problems inherent in overly simplistic titling approaches that fail to adequately consider the situational context, including formalizing exclusionary customary systems, promoting property transfers away from the community, and cutting off access to those with customary secondary or seasonal rights.

Several forested countries have implemented large-scale programs to recognize the tenure and rights of forest communities. While each program has its own specificities and problems, much can be learned about the means employed to recognize community tenure rights. The cases presented in Box 1 below show several methods for recognizing forest tenure rights, from legal reform making customary land claims equal to statutory claims as in the case of Tanzania to the creation of forest user groups in Nepal to the creation of community forest concessions in Guatemala.

Box 1: Some examples of recognizing community tenure rights from Africa, Asia and Latin America

With a stroke of the pen, the 1999 **Tanzanian** Village Land Act and Land Act recognized customary ownership rights of communities as legally equivalent to rights acquired through the statutory system (Palmer, 1999). Wily (2008) notes that the creation for Village Forest Reserves as provided for in the 2002 Forest Act served only to reiterate the community ownership and management of village forests.

Community forest management in **Nepal** has been successful in sustaining forest-based livelihoods and forest condition. The 1993 Forest Act, 1995 Forest Regulations and the 1999 Community Forestry Guidelines give communities the management rights to more than 1 Mha of national forest lands (Paudel, N.S. 2008:25). User groups are formed, identified, and given legal recognition through the district level forest office in the form of a certificate of registration (Kanel et al. 2005:76).

Community forest concessions in **Guatemala** have proven to be successful in fostering good forest conditions. In Peten, for example, communities were granted a 25 year renewable contract to over 450,000 Ha of forest land. In a recent study, it was shown that this concession performed much better in maintaining healthy forest condition when compared to the neighboring protected areas (Monterosso and Barry, 2008).

Brazil is a standout example of a heavily forested country taking major steps to devolve forest ownership and management authority to Indigenous Peoples and local communities. Brazilian law has established the legal recognition and processes to register indigenous lands (*terras indigenas*), extractive reserves (*reservas extrativistas*), *quilombolas* and other multi-use protected areas (ISA, 2007). Sunderlin et. al (2008a) note the rapid pace at which state forest lands were transferred to indigenous peoples and local communities (today, more than 130 Mha are under ownership or recognized management by Indigenous Peoples and communities). National NGOs have played a key role in ensuring the government fulfills its legal obligations to demarcate and register the communities' rights.

Mozambique's 1997 Land Law (*Lei da Terra*) recognized and protects the historic use and habitation rights of millions of rural Mozambicans. The law recognized the territorial nature of customary land tenure systems to include land, forest and water resources and does not require them to be registered to have full legal force (WRI 2008:53). An innovative methodology was developed to demarcate community territories and register their DUAT certificates (*direito de uso e aproveitamento de terra*). The process involves community awareness raising of their legal rights, consultation and negotiation with neighboring communities over boundaries and shared resources, demarcation of the territory, and registration of the geographic coordinates and issuance of the DUAT certificate by competent authority (Tanner, 2002).

3. The Costs of Recognizing Rights and the Projected Costs to Finance REDD Schemes

Despite recognizing the limits of land registration and titling for ensuring tenure security, for the purposes of this paper, the direct costs related to the territorial demarcation, registration and titling and household titling serve to give an indication of the costs involved in recognizing the tenure rights of forest communities. While this is an imperfect proxy for the full recognition of forest communities' rights, it begins to unpack the implications of such policy decisions. Moreover, the costs of recognizing rights are put in the context of the projected costs to pay for an international REDD scheme to inform policy deliberations.

Cost considerations for recognizing tenure rights

Programs to recognize tenure are long-term endeavors that encounter political opposition and waning will. The costs of recognizing rights are likely to be higher in areas that are hard to reach, in areas that are highly contested, and in areas where significant amounts of international expertise are needed to initiate projects and reform law. At a more direct level, the costs of identifying and demarcating the boundaries of community lands will vary depending on the geographical precision required (i.e. more sophisticated technology and higher resolution maps will be needed), where a higher degree of formality is required by law (i.e. titling as opposed to local registration) and because of the differences in purchasing power in different countries.

Implementation of national policies to recognize forest community tenure rights almost always follows legislative and regulatory reforms. Calculating the true costs of legislative reform is close to impossible. One can examine the costs of legal support, of recent lobbying activities, and government expenditures on the legislative process, but these costs will not accurately reflect the true social and financial costs 'paid' to reach the reform. As an example, the costs associated with the decades of social mobilization that led to the passage of India's Forest Rights Act are impossible to calculate.

Some of the costs to recognize community forest tenure rights

While there are many incalculable costs to be borne in the process of recognizing tenure rights, a basic set of costs can be established.⁸

Implementing organizations and agencies will need to pay for:

- *Administrative costs:* e.g. processing registrations and titles, payroll costs, office costs;
- *Legal and dispute resolution costs:* e.g. court costs, alternative-dispute resolution training, documentation;
- *Equipment and materials:* vehicles, GPS tools, maps, markers, surveying tools;
- *Staff costs:* international, national and local staff salaries and benefits;
- *Awareness raising and consultation costs:* printed materials, radio broadcasts, site-visits;
- *Implementation costs:* mapping, planning, etc;
- *Training:* training on GPS, surveying, consultation skills, para-legal skills;
- *Recurring costs:* records maintenance, office costs.

⁸ For a detailed overview of total costs paid for community demarcation and registration in Mozambique, see Annex 1.

3.1 METHODS FOR ESTIMATING THE COSTS OF RECOGNIZING RIGHTS

Cost data for interventions recognizing the territorial tenure rights of forest communities are not readily available, and where available they are limited in detail and restricted to direct expenditures. For this study, data were derived from published reports, project evaluations, personal communication with government officials and project staff and refer to expenditures by government and non-governmental organizations. The variety of sources consulted implies a heterogeneous data set, but the costs are contained within a range that is orders of magnitude lower than the range of overall projected costs for REDD.

Since REDD programs will operate almost exclusively in developing, highly-forested countries, data for recognizing tenure was only sourced from developing countries. They do not reflect the costs paid by the community or, in the case of expropriation from large landholders, the costs of paying for improvements to the land. Moreover, the costs presented here do not reflect the forgone costs that governments save by devolving management authority and *responsibility* to communities. The savings to the government (e.g. paying for less staff) can be substantial, but are not readily quantifiable.

While the examples of costs from recognizing community tenure rights are certainly the most relevant for forest areas, the costs of household (or parcel) titling were also included to provide some indication of the upper limits of costs.⁹ In the cases of individualized titling where the costs were expressed per parcel, the average parcel size in each country was used. For most countries these data were taken from the FAO World Census of Agriculture or other national sources.

In order to present the costs of recognizing rights in comparison with the projected costs for international REDD schemes a standard comparable unit of measure was needed. The most relevant unit to measure was the cost of each intervention expressed per hectare. To determine the costs per hectare, the total costs of the intervention were divided by the area recognized giving a cost/hectare. This was also done to the estimates of REDD costs found in the literature.

While some of the cost examples are derived from titling agricultural lands, many of the costs will be similar. Variables that might affect the costs in forest areas compared to agricultural lands might include the remoteness of forest areas, the difficulty in navigating forested terrain, and longer socio-political processes in certain areas because of the higher-value of the resource.

3.2 RESULTS: COSTS OF RECOGNIZING RIGHTS

Despite the general lack of cost data for recognizing tenure, some detailed data for the recognition of community tenure were found and are presented in Table 2 below. The average cost of the cases examined here for the recognition of community tenure is \$3.31/ha with a cost range of \$0.05/ha to \$9.96/ha. The average cost of the titling of household plots is \$23.16/ha with a cost range of \$9.44 to \$36.78/ha. The variability of costs amongst and within countries reflects the different costs of labor, technology needs and scale of intervention among other considerations.

⁹ Several authors have noted the cost-effectiveness of recognizing community tenure in a way that builds on the customary systems regulating resource (e.g. Cotula and Van de Brink cited in WRI, 2008:53; FAO, 2008: 48; Fitzpatrick, 2005:452). The costs to recognize individualized parcels are much higher than the cost of broad territorial recognition since boundaries must be adjudicated with more precision, larger teams are required, more equipment is needed to work at a large scale, and the administration and transaction costs to process several thousand titles are undoubtedly higher than the administration and transaction costs to process one title that might cover the same amount of geographic space.

Table 1: Costs of recognizing tenure rights

Country	Type of area	Type of recognition	Cost(USD)	Area (ha)	Cost/ha (USD)	Comment/Source	Average costs/ha: community versus household
Bolivia	Community	TCO ¹⁰ and community titles	28,878,000	2,900,000	9.96	Land regularization project. (WB, 2005:5)	Community territories \$3.31/ha
Brazil	Protected area (social reserve)	Demarcation and registration	0.5	1	0.50	(Nepstad, 2007:3 and 19)	
Brazil	Indigenous territory	Demarcation and Registration	218,032	3,970,000	0.05	(ISA, 2008: personal communication)	
China	Collective forests	Land certificate	352,000,000	160,000,000	2.20	China State Forestry Administration cost of surveying and issuance of land certificates, etc incurred under the collective forest reform. (SFA, 2008: personal communication)	
Mozambique	Community	Demarcation and registration	282,634	1,608,903	0.18	Totals based on demarcations of 33 communities. (CTC 2003:Annex)	
Mozambique	Community	DUAT	13,876	2,000	6.94	(CTC 2003:51)	
Cambodia	Household parcel	Title	8.5	0.9#	9.44	(WB, 2008: personal communication)	Household plots \$23.16/ha ¹¹
Indonesia	Household parcel	Title	30	0.87*	34.50	(AusAid 2001:17)	
Indonesia	Household parcel	Title	32	0.87 *	36.78	(WB, 2008: personal communication)	
Laos	Household parcel	Title	18	1.57*	11.46	(WB, 2008: personal communication)	
Philippines	Household parcel	Title	51	2.16*	23.61	(WB, 2008: personal communication)	

CDRI (2001:8); * FAO World Census of Agriculture. 1990.

¹⁰ Tierra Comunitaria de Origen: Legal recognition of indigenous communities

¹¹ This average is similar to the average titling cost per parcel compiled by Burns (2006). In his examination of the titling costs per parcel in Armenia, Kyrgyzstan, Moldova, Indonesia, Thailand, El Salvador, and Peru. The per parcel costs ranged from \$10.55 to \$55.69, and averaged \$26.12.

3.3 ESTIMATING THE COSTS OF REDD

As interest in harnessing the mitigation potentials of forests has increased over recent years, a number of studies have been conducted to estimate the costs necessary to halt or slow greenhouse gas emissions from deforestation and forest degradation. The estimates, while made by internationally-known research and policy institutes, cannot be assumed to be completely accurate. Most of the studies have estimated the opportunity costs of stopping economic activities that deforest and degrade forest areas. Other estimates have looked at the administration and implementation costs that would need to be paid to set for a well-functioning international scheme.

The costs of REDD can be grouped into 3 categories:

- *Administrative and implementation costs:* Measurement, monitoring, capacity building, planning, enforcement, governance, social programs, regulation enforcement costs; improved forest management (including the clarification of land tenure); intensified agricultural production; local and national capacity building; enhanced land use planning
- *Opportunity costs to be offset:* Any land uses that generate livelihoods or revenue involving deforesting or forest degradation will have to be abandoned. The loss will be compensated.
- *Transaction costs (especially with regard to carbon financing):* Brokerage, verification, certification, insurance, quantifying existing carbon stocks; external verification; project documentation; registration fees

An extensive literature review and consultation with experts was conducted to compile and interpret the cost estimates for establishing, funding and operating an international REDD scheme. In the table below, a sample of the estimations is presented. While the cost estimates vary, it is clear that the world's leading experts on REDD conclude that the costs will exceed several billion dollars a year until 2030.

Where costs were presented in terms of price per ton of carbon (tC) or carbon dioxide equivalent (tCO₂e) carbon needed to achieve reduced emissions, a conservative average of 360tCO₂e/hectare was used (Spracklen, 2008:15).

3.4 RESULTS: THE PROJECTED COSTS OF REDD

The projected costs of REDD found in Table 3 below. The costs for REDD are costs to be paid *per year* until at least 2030 in most projects. The range for the total cost of REDD ranges from \$400/ha/year to \$20,000/ha/year.¹² The estimates of the opportunity costs to be paid range from \$484/ha/year to \$939/ha/year. The administration and implementation costs alone range from \$4/ha/year to \$184/ha/year. The average lowest projections for the total cost cases assembled here is \$2,547/ha/year while the average of the highest projection for the total cost cases is \$8,281/ha/year.

¹² Pagiola and Bosquet (2009) present considerations on the costs of REDD to be paid by implementing countries. The authors present lower opportunity and implementation costs to be paid by the implementing countries arriving at an example scenario range of \$38/ha/year to \$64/ha/year. These costs are based on targeted payments to stop deforestation in threatened areas. The costs to the international community including the technological infrastructure, monitoring and verification, and transaction costs are not included in the authors' calculations.

Table 2: Cost Projections for a Global REDD scheme

Type of cost	Cost (USD)	Area covered	Cost/ hectare/year	Comments/Source
Opportunity costs	12.2 billion /year until 2030	13Mha	939	(Blaser and Robledo, 2007:7)
	3to 5 billion/year	6.2Mha	484 to 806	(Greig-Gran, 2006:9)
Administration and implementation costs	0.38/tCO ₂ e	1ha	136	Brokerage, verification, certification, insurance Assuming 360tCO ₂ e/Ha (Antinori and Sathaye cited in Boucher 2008)
	0.51/tCO ₂ e	1ha	183.6	Measurement, monitoring, capacity building, planning, enforcement, governance, social programs Assuming 360tCO ₂ e/Ha Nepstad cited in Boucher 2008.
	344 million to 2.28 billion/year for 5 years	13Mha	26.5 to 175	Capacity building for 5 years (Eliasch, 2008)
	25 million to 93 million	6.2Mha	4 to 15	(Grieg-Gran, 2006:8)
Total cost estimates	22 million 33 million/year until 2030	6.5Mha	3,384 to 5,067	(Eliasch, 2008)
	400 to 700/ha/year	1ha	400 to 700	(Sohngen and Beach 2007)
	3 to 30/tCO ₂ e	1ha	500 to 20,000	Estimate vary depending on the amount of tCO ₂ e/Ha (Spracklen et al., 2008:15)
	114 billion/year	13Mha	8,770	(IPCC, 2007)
	400 million to 1.2 billion /year until 2030	1.3Mha	307 to 923	(Sathaye et al., 2007 cited in Trines, 2007:40)
	25 billion to 185 billion /year until 2030	13Mha	1,923 to 14,230	(Trines, 2007:48)

3.5 ANALYSIS OF RESULTS AND IMPLICATIONS FOR POLICY PRIORITIES

The cost range of recognizing community tenure rights (\$0.05/ha to \$9.96/ha) is several times lower than the yearly costs estimates for administering, implementing and financing an international REDD scheme (\$400/ha/year to \$20,000/ha/year). Therefore it can be argued that a relatively insignificant investment in recognizing tenure rights has the potential to significantly improve the world's carbon sequestration and management capacity. Moreover, given the prospect that a global REDD scheme will become a reality, prioritizing policies and actions aimed at recognizing forest community tenure rights can be a cost-effective step to improve the likelihood that REDD programs meet their goals.

CONCLUSION

This paper explored the role of forest tenure in reducing forest carbon emissions and enhancing carbon sequestration capacities, the lessons from implementing programs to recognize tenure rights, and put the costs of recognizing rights in a broader perspective with the costs of REDD with the aim of informing policy decisions and priorities regarding forest-based mitigation actions. As the world considers strategies to mitigate global climate change using forest resources, efforts to tackle the drivers of deforestation must be understood. The growing evidence that communities and households with secure tenure rights protect, maintain and conserve forests is an important consideration for the world's climate if REDD schemes go forward, and even if they do not.

Recognizing and securing rights is complex, but it is also feasible in many forest areas. There are methodologies and a growing pool of expertise on scaling-up the recognition of tenure rights, and the costs of doing so add to the feasibility of making it a policy priority. More work is needed to understand and transmit to policy makers the full costs of interventions to recognize tenure rights and the operational best practices from past experience. There is a danger that the attention being paid to tenure rights could lead to quick, but short-sighted, fixes. The NGO practitioner and research communities can provide policy advice and methodologies to ensure that these processes are able to reach the scale needed to impart real mitigation benefits while respecting local tenure systems and rights and providing fuller tenure security for forest communities. Finally, continued research on the role of tenure in promoting forest carbon sequestration and maintenance and the tenure dimensions of current forest carbon emissions will be essential to future endeavors to mitigate climate change.

Annex 1:

Example costs from community delimitations in Mozambique (CTC, 2003)

Table 3: Average Costs of 20 Community Delimitations - Zambezia

	Variable costs	Total costs including salaries & other fixed costs
Information and Awareness Raising		
Meetings with District administration (1), Chief of Administrative Post (1) and Locality Administration (1).	200.000,00	4.098.950,70
Meeting with leaders of the community to be delimited, to present the and develop a workplan (1).	450.000,00	11.683.152,10
Meetings to inform other population groups (villages etc) inside the community to be delimited (6).	1.635.000,00	2.927.900,35
Meeting with the whole community, programme, and selection of representatives (1).	2.425.000,00	12.299.352,10
Meeting with leaders of neighbouring communities (5).	2.210.000,00	3.427.110,42
Meeting with other population groups (villages etc) in neighbouring communities (30).	1.730.000,00	1.541.060,07
Meetings with neighbouring communities to choose representatives.	1.525.000,00	3.312.110,42
Seminar with whole community, neighbouring communities, and District Administrator (1).	2.650.000,00	13.746.652,10
Sub total Awareness Raising		
Diagnostic		
Meeting with the community to discuss workplan (1).	793.000,00	12.329.402,10
Meetings and interviews with sub-groups (villages etc) about the history of the area, social organization, use and management of resources, participatory maps (3), economic strategies and the resolution of conflicts, and walking a transept of the area (6).	6.735.000,00	23.710.802,10
Organize the PRA report, including the 'cartograma' and the first partial handing back of results to the community.	1.700.000,00	12.926.302,10
Sub total diagnostic		
Outline map and descriptive details		
Checking borders with neighbouring communities (5).	1.960.000,00	13.069.702,10
Organize georeferencing using GPS, of non-natural borders and points, and placing natural borders and geo-referenced border points of the community on a 1:50.000 topographical map.	1.438.000,00	13.409.652,10
Constructing cement markers.	1.760.000,00	15.121.652,10
Preparing a descriptive record.	1.640.000,00	12.468.652,10
Sub total Descriptive record and outline map.		
Handing back results (devolução).		
Organize a seminar to hand back results to the community, together with neighbouring communities, SPGC and District Administrator (1).	3.325.000,00	14.172.402,10
Sub total handing back results.		
Registration in the National Cadastral Atlas.		
Organize the keeping of documentation for the community.	1.700.000,00	13.876.302,10
Hand over the registration documents for the community area, now recorded in the Cadastral Atlas.	600.000,00	11.226.302,10
Organize the official handing over of the Certificate to the community.	3.840.000,00	13.812.402,10
Sub total Registration in the National Cadastral Atlas.		
TOTAL, PROVING AND RECORDING COMMUNITY LAND RIGHTS	38.316.000	209.159.861,39
Value per delimitation in US\$	1.596,00	8.714,99

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