FOREST CARBON PARTNERSHIP FACILITY

UN-REDD PROGRAMME

REDD+ BENEFIT SHARING: A COMPARATIVE ASSESSMENT OF THREE NATIONAL POLICY APPROACHES

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The Forest Carbon Partnership Facility (FCPF) is a global partnership, housed within the World Bank's Carbon Finance Unit, which became operational in June 2008. The FCPF provides technical assistance and supports countries in their efforts to develop national strategies and systems for REDD+ in developing forest countries. The FCPF further assists countries to test approaches that can demonstrate that REDD+ can work, and provides them with performance-based payments for emission reductions programs. The support to countries for engaging in REDD+ activities is provided through two mechanisms within the FCPF, the Readiness Fund and the Carbon Fund.

UN- REDD

P R O G R A M M E

The UN-REDD Programme is the United Nations collaborative initiative on Reducing Emissions from Deforestation and forest Degradation (REDD+) in developing countries. The Programme was launched in 2008 and builds on the convening role and technical expertise of the Food and Agriculture Organization of the United Nations (FAO), the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP).

The UN-REDD Programme supports nationally-led REDD+ processes and promotes the informed and meaningful involvement of all stakeholders, including Indigenous Peoples and other forest-dependent communities, in national and international REDD+ implementation.

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EXECUTIVE SUMMARY

This paper reviews three leading forest sector policy approaches relevant to benefit-sharing for reducing emissions from deforestation and forest degradation (REDD+): payments for ecosystem services, also known as payments for environmental services (PES), participatory forest management (PFM), and forest concession revenue-sharing arrangements. A survey is made of these three approaches in order to draw on potential lessons for REDD+ benefit sharing. These forest management and conservation approaches are chosen due to their broad usage across tropical forest regions today and their potentially significant benefit sharing implications. None of the three approaches addressed here guarantees "better" or "more equitable" benefit sharing by design alone. Rather, an attempt is made to explore the differing benefit sharing mechanisms and experiences to date in each approach, their salient architectural differences, and any modifications potentially required of each for successful national REDD+ programs.

Considerations of vertical and horizontal allocation of benefits form an essential sub-text to the main comparison of policy approaches in this paper, both of which are essential for successful REDD+ performance. Vertical benefit sharing issues concern methods for receipt of fund inflows from donors or markets into national funds or other financial mechanism, and transmission via various domestic government agencies or other entities to local-level actors. Horizontal allocation concerns the internal distribution of benefits among groups responsible for REDD+ activities. As is commonly reiterated in literature on REDD+, both vertical and horizontal allocation need to take place equitably, efficiently and effectively, and the approaches outlined here can vary considerably in their abilities to deliver with respect to each of these considerations.

PES presents one of the most important developments for financing ecosystem conservation efforts in recent decades, and as such is addressed in the most comprehensive detail of the three approaches. Many implementing countries and observers have embraced direct PES deals with private landholders or communities as the preferred policy approach for REDD+ due to the stronger performance of financing incentives and service providers than traditional funded conservation programs. Socioeconomic equity with regard to participation of local and indigenous communities, exclusivity of land holding tenure, and conditionality of payments all can pose challenges for PES, but recent innovations in project design and implementation are also encouraging. In a broader sense than project-based payments to landholders alone, PES encompasses a number of important alternative mechanisms for national-scale finance systems, including tax-based national funds and intergovernmental fiscal transfers.

PFM presents strong promise as a decentralized management strategy compatible with PES under which small landholder communities may be included in a future REDD+ delivery system. This approach consists generally of community forest management (CFM), which usually occurs on community-owned and -managed land, and joint forest management (JFM), in which governments retain ownership of forest land and villagers are allowed to live in and benefit (albeit often less) from forest resources. Recent studies on PFM recommend devolving ownership, management responsibilities and benefits of public lands to local governance levels and community actors for increased reforestation and forest conservation. CFM generally performs better than JFM due to the higher degree of local control and benefits received, however also entails risks and administrative difficulties for local or indigenous communities involved.

Addressed in the least detail of the three approaches covered here, forest concession revenue sharing arrangements offer a potential "default" option to distribute benefits from REDD+ contracts on government-owned land among communities living near concessions, developers or other entities leasing land, and the state. Often, the determination of the relative shares of proceeds from forest revenues is made uniformly at the national level according to forest estate types rather than at a provincial or local level, which can overlook large differences in carbon sequestration values and opportunity and transaction costs among provincial or even local contexts. Additionally, past experiences of forest concessions in tropical forest countries have resulted in inequitable results for forest-dependent communities living inside or nearby commercially-logged areas. Another major negative aspect of concession revenue-sharing is the lack of involvement of local communities/indigenous people in forest management and related decision making. This could lead to serious problems with REDD+ non-compliance during the concession permit period and potentially more so once a permit expires, the variation in dates of which would create complications unless made uniform. As a result, many implementing countries in a future REDD+ regime would do well to completely overhaul or else avoid the forest concession model in any part of a REDD+ benefit-sharing regime.

An architectural comparison of the three policy approaches profiled shows no 'one size fits all' solutions and considerable potential for combinations of approaches. An at least partly domestically-financed PES policy approach for REDD+ benefit sharing would seem to provide the greatest financial sustainability of the policies examined, although PES domestic financing may be more immediately practical for upper- than lower-tier developing economies. If mixed with sustainable forest management activities such as reduced impact logging, carbon payments could potentially also provide a high degree of sustainability to CFM activities under the PFM approach. Recent innovations in PES (or hybrid PES/PFM) approaches could greatly improve both efficiency and equity (e.g., bundling smallholders, simplified land tenure determinations, streamlined monitoring and verification, prioritizing according to socioeconomic criteria). Forest concessions could scale up quickly and thus potentially offer high efficiency and clarity relative to other arrangements, especially where revenue sharing determinations are made uniformly at a national level. However, such initial "scaling-up" efficiencies might be offset by longer-term effectiveness and equity disadvantages (especially in situations where concessions effect local communities or biodiversity) unless revenue sharing determinations were devolved to a provincial level and comprehensive safeguards incorporated to ensure local community participation in management and decision-making, and receipt of benefits. Finding a balance between the "three e" objectives among forest concessions would likely involve discriminating between pre-existing concessions posing no foreseeable impacts to local communities or biodiversity, and existing concessions or new proposals likely to pose such impacts.

A national PES policy approach, funded from more than one income source and combined with domestic finance, likely could present the overarching REDD+ approach for most countries, with PFM and some forest concession revenue-sharing where unavoidable providing "lower-tier" implementation approaches. Income from an international REDD+ agreement (through whatever mechanisms may be agreed upon) therefore could be, although important, only one of the payment sources for a country delivering forest ecosystem services. Domestic financing should be included both because of income security with a finance source that is expected to be more controlled and predictable than international and market financing arrangements, and because of the need to create a strong domestic policy enabling PES management.

Benefit distribution via PFM and/or PES approaches combined with land tenure reform would seem well placed to address local and indigenous communities clearing land, provided vertical and horizontal allocation mechanisms are equitable and efficient. Of course, the three platforms discussed here for REDD+ benefit delivery largely target changes in activities occurring within forests, and much of REDD+ would also direct payments to activities outside forests. Under all three approaches, some benefits would also need to reach larger commercial agriculture and logging interests, which might be done efficiently by allocating a portion of payments via provincial level institutions in long-term forest concessions, provided improved allocation mechanisms and safeguards to protect local and indigenous communities' tenure and forest use rights. However, PES/REDD+ benefits may considerably change the original negotiation situation (in terms of a revised opportunity cost and cost-benefit analysis of the various management options) for the project/concession area. Consequently, any PES/REDD+ benefits going to larger commercial agriculture projects and logging concessions involving indigenous peoples and local communities would benefit from renegotiation of related agreements with those parties.

Comparison of regional deforestation data from Africa, Asia, and Latin America offers some further insights with regard to the potential abilities of three policy approaches to address deforestation drivers. Although care should be taken not to over-generalize, a brief analysis of regional drivers suggests strategic targets for benefit sharing under PFM, PES, and forest concession revenue sharing. Pasture and ranching drive much of Latin American deforestation, suggesting the importance of targeting livestock interests outside forests as well as forest dwellers living inside forests. In contrast, African and Asian deforestation is driven predominantly by agricultural conversion, suggesting PFM and PES benefits could be targeted to promote a shift to more sustainable agriculture. Asia and Africa both also have larger commercial logging driven deforestation, potentially providing a role for forest concession revenue sharing as well.

Experience to date suggests that scaling up of local custom-tailored projects to provincial and national scale REDD+ work will present challenges. Consideration of local opportunity costs and benefit preferences is especially relevant in delivering the right size and type of REDD+ benefits, and similarly equity and exclusivity of land tenure will require extensive local inputs. Thus, work to date suggests devolving decision making to the lowest level possible for much of benefit sharing management, regardless of the policy approach chosen.

The policy approaches outlined here are not mutually exclusive. Countries may incorporate ideas from other REDD+ partners while not discarding their own domestic experiences. However, in order to avoid unnecessary transaction costs, redundancies, confusion and competition from multiple REDD+ program instruments operating simultaneously at the national level, it will be to countries' advantage in the long run to simplify and harmonize forest policy approaches. Although much still depends on the details of a final UNFCCC decision on REDD+, it is at least clear that a much wider spectrum of benefit sharing arrangements will exist besides directly paying landholders not to cut down trees. This is especially true, if sustainable local livelihoods and responsible economic development models are desired as well. As it can be presumed that resources will be tight, benefits could be targeted strategically to offer important biogeographical co-benefits with other programs and measures, particularly with climate adaptation and protected areas programs.

INTRODUCTION

This paper outlines national benefit-sharing approaches from three areas of forest management policy with respect to reducing emissions from deforestation and forest degradation in developing countries (REDD, or REDD+)[1] under the UN Framework Convention on Climate Change (UNFCCC). The three policy approaches outlined here are payments for ecosystem services (PES), participatory forest management (PFM) and forest concession revenue sharing arrangements.

Although REDD+ national programs may also target activities driving deforestation from outside forests, such as agricultural and livestock practices, here the focus is largely from a forestry perspective on broad policy approaches for benefit sharing, drawing on respective experiences. Simultaneous to the discussion of policy approaches here, two main sets of decisions relating to implementing countries' benefit distribution are relevant to consider throughout this paper.

First, governments will need to determine how to vertically transfer REDD+ fund inflows potentially from external funding and/or forest carbon credit buyers through national and/or sub-national governments (depending on national REDD+ plan chosen), and to the domestic actors or entities responsible for REDD+ performance. This includes deciding which actors or organizations will be eligible to receive what kinds of benefits for what types of activities, and how those funds should be transferred.

1 REDD+ adds "conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries" as additional goals to the original REDD objectives of avoided deforestation and forest degradation. UNFCCC. (2007). "Bali Action Plan". Decision 1/CP.13. Article 1(b)(iii). U.N. Doc. FCCC/CP/2007/6/Add.1.

Within each of these vertical distribution levels, countries will need to consider how to horizontally distribute REDD+ benefits in order to ensure the correct individuals or groups receive payments or in-kind services. Distributing adequate benefits to local level communities and indigenous groups presents a particularly challenging hurdle, given the importance of these groups to the overall success of REDD+ and their tendency to be disadvantaged.

Finally, both vertical and horizontal allocations may maximize equity among actors responsible for national performance (in particular poor and marginalized groups at the local level), environmental effectiveness of payments (i.e., carbon sequestration, as well as forest biodiversity conservation and poverty reduction), and efficiency of national and sub-national programs (largely by minimizing transaction and implementation costs). However, these goals are often in conflict with one another, as will be discussed, and their balancing will largely fall to governments in close consultation with civil society to choose how to balance them based on their national circumstances.

Of course, often countries have multiple forest management policy approaches acting at once (e.g., PES, PFM, forest concessions and integrated conservation and development projects). Depending on their forest management experience to date and the deforestation and forest degradation drivers targeted by their overall forest management policy, countries may choose to simultaneously implement or even combine elements from the policy approaches described here in their REDD+ program. To the extent that various policy approach scenarios are comparatively evaluated and higher performing policies or techniques given preference in future implementation, deliberate, carefully planned use of multiple approaches could help enhance forest sector adaptive capacity.[2] However, if not harmonized, multiple forest management policies could also compete with one another and create unnecessary confusion (especially at the local level where information is scarcer). This confusion is even more likely when considering various other natural resource management initiatives outside REDD+ (e.g., protected areas, adaptation policies, and sustainable forest management) and programs in other sectors with impacts on forest management.

This paper begins with a broad overview of each policy approach, incorporating examples of such approaches in practice from several countries. Country policy approach experiences with regard to their national REDD+ planning are briefly profiled as demonstrative of each approach (although the focus here is not on the specific details of each country's REDD+ plan, which are still highly dynamic at the time of writing). Next, the architectural traits of the policy approaches are comparatively evaluated, and a brief assessment provided of their abilities to address drivers of deforestation. Finally, some challenges and lessons learned from REDD+ benefit sharing planning to date are summarized, including suggestions of where next steps might be focused and some conclusions offered.

2 See Environmental Law Institute, "Legal & Policy Tools to Adapt Biodiversity Management to Climate Change: A Resource Manual" (forthcoming 2011), at 17-20 (also noting risks inherent in active adaptive management and the need for careful planning and ecosystem monitoring). See also, Doremus, H., Precaution, Science, and Learning While Doing in Natural Resource Management, 82 Wash. L. Rev. 547, 569-570 (2007).

1. POLICY APPROACHES FOR BENEFIT SHARING

1.1 PES National Policy Approach

1.1.1 PES Projects: Theory to Practice

In the last decade, PES has become an umbrella term that in some circles is even used synonymously with "conservation finance." As contemplated currently, REDD+ itself envisions a PES-like system at the international level likely functioning either via public funding or carbon markets, and the general concept of performance-based payments towards REDD+ goals also applies at a national level. However, PES projects in a narrow sense of payments to private landholders are only one form of accomplishing this national performance. At a national and sub-national level, a variety of policy approaches may be available to countries implementing REDD+ that may be used in combination with some form of PES. As used in this paper, and specifically in this chapter, PES refers mainly to systems of private contract and state mediated PES, the latter of which is found in a number of variations as well.

From a classical economic perspective, PES has been defined as a voluntary, conditional transaction between at least one seller or provider, and at least one buyer over a well-defined ecosystem service (ES).[3] Framed in this sense, the end result of PES commonly consists of payments to individuals or communities in exchange for either not performing land use practices expected to result in environmental or natural resource degradation, or for actively performing land use practices that are expected to create positive environmental benefits. For such payments to achieve their intended results, then, buyers' willingness to pay must at least meet sellers' willingness to accept payments in exchange for the change in their behaviour (i.e. opportunity costs and any transaction costs plus a premium).[4] Recently, three subconditions for "genuine" PES have been emphasized as well, including: (a) a clear relationship between land use promoted and ES provided; (b) parties' ability to voluntarily terminate as well as enter into the contractual relationship (i.e., full voluntarity); and (c) monitoring to ensure additionality and conditionality of the transaction.[5] Studies have found that these conditions have rarely entirely been met in a pure sense, as voluntariness, conditionality and clarity regarding environmental services provided have been missing from most PES systems to date.[6]

Nonetheless, PES presents one of the most important developments for financing ecosystem conservation efforts in recent decades. Many implementing countries and observers have embraced PES as the preferred policy approach for REDD+ due to the stronger link between funders (or buyers) and service providers (or sellers) than traditional funded conservation programs, and the resulting conditionality creating incentives.[7]

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3 Wunder, S., 2005. "Payments for Environmental Services: Some Nuts and Bolts." Occasional Paper No. 42. CIFOR, Bogor.

4 See Börner, J. et al., 2010. "Direct conservation payments in the Brazilian Amazon: Scope and equity implications," Ecological Economics 69, 1272–1282, at 1273.

5 Engel et al., 2008. "Designing payments for environmental services in theory and practice: An overview of the issues," Ecological Economics 65, 663-674, at 664.

6 See Muradian, R. et al., 2009. "An alternative conceptual framework for understanding payments for environmental services Reconciling theory and practice." Ecological Economics 69 (2010) 1202–1208, at 1203.

7 See, e.g. Ferraro, P.J. and Kiss, A., 2002. Direct payments to conserve biodiversity. Science 298, 1718–1719.

Research suggests that PES likely will not work as a REDD+ policy model in all contexts (or, at least not in the standard definitional sense), due to the need for a variety of threshold institutional preconditions. Although not the only relevant issues, exclusivity of land rights (i.e., adequate land tenure) and equitable benefit-sharing arrangements are found to be essential for the PES model to function for REDD+.[8] (Even if both ingredients will likely be important for any forest sector policy approach to work as a REDD+ benefit sharing system, exclusivity and equity play significant roles under PES in order to incentivize change in forest practices from "business as usual"). Additionally, estimating opportunity costs can present numerous difficulties, as discussed in Box 1.1 below.

Box 1.1 Challenges in Estimating Opportunity Costs

As described throughout this paper and much of PES/REDD+ literature, it is widely deemed essential that REDD+ payments meet as closely as possible the opportunity costs of individuals or groups in order to promote a change in behaviours (where those costs may feasibly be met from available financial resources). However, opportunity costs for avoided deforestation and forest degradation behavioural choices are not necessarily obvious figures that can be determined easily as in other market or fund-based financial enterprises. In many cases, governments or developers likely will need to estimate opportunity costs of local communities, individuals or businesses compared to the value of their next best option for a given acre of forest land. Conversely, opportunity cost valuation should not overlook the values of standing or sustainably used forests, especially for local/indigenous communities (e.g., building materials, water, food, medicine, cultural artifacts). Whether that information may be easily and reliably produced for all relevant actors in a given country or region, and whether economic estimates can capture the full range of alternative land uses are potentially vexing questions. Moreover, the answers to these questions could differ dramatically depending on the locale in question and even from year to year or month to month.

Although the economic intricacies of opportunity cost construction are beyond the scope of this paper, some basic considerations are important to bear in mind here. Briefly, opportunity costs may be:

- **Inappropriate:** if other opportunities relate to illegal activities;
- **Inadequate:** if not representative of what payments or actions are necessary (e.g. property/land tenure rights poorly defined, political or cultural underlying reasons for deforestation, outside perverse incentives add significantly to opportunity costs, transaction costs not included);
- **Difficult to estimate correctly:** e.g., if in areas outside established market system, if landowner perceives his/her survival to depend on other use of land, or if such information constitutes proprietary information (e.g., to most businesses);

8 Börner, J. et al., 2010. at 1273-1274, supra note 4 above.

- **Irrelevant:** if strong carbon compliance market arises, then those prices and not opportunity costs would likely determine prices to pay local forest owners;
- **Incorrectly calculated in a given situation:** empirical and simulation models can produce dramatically different results; national estimations may be overly broad if divergent local contexts and costs; and
- **Overly static:** opportunity costs change due to fluctuations in markets, technologies, and national and political regulatory and social norms[9]

The above is not to say that opportunity cost estimation is impossible or should be ignored entirely. Although there may be no easy answers, the difficulties in estimating opportunity costs in particular situations tend to emphasize the importance of correcting as many of the above variables as possible. Notably, improving forest governance, removing deforestation drivers and enhancing land and forest tenure regimes might be expected together to go the furthest toward lowering and stabilizing opportunity costs. In particular, clear rules and better enforcement of existing forest management regulations may work to remove opportunity costs associated with illegal activities, thereby encouraging forest users to comply with aims of REDD+ programs and making REDD+ benefits more attractive.[10] On the demand side, much could be gained from bridging REDD+ with activities to curb markets for illegal forest products, such as the European Union Forest Law Enforcement Governance and Trade (FLEGT) program. Finally, REDD+ programs may be targeted to marginal areas with low opportunity costs where payments may "tip the balance" in favour of conservation and let go of those with high opportunity costs.[11]

1.1.2 Equity, Exclusivity & Conditionality

Equity

Equity has posed difficulties for PES projects to date, as it is commonly seen in a short run perspective at odds with the Coasean "economic efficiency" argument serving as the original justification for PES.[12] Many PES transactions, especially within the context of REDD+, take place on rural lands in developing countries. As a result, equity issues support targeting the sharing of benefits with poor and indigenous populations and measures to prevent the wealthiest, best positioned, or most influential members of

9 Gregersen, H., et al. 2010 "Does the Opportunity Cost Approach Indicate the Real Cost of REDD+: Rights and Realities of Paying for REDD+," Rights and Resources Initiative, Washington, DC., 1-3.

10 See, e.g., Wunder, S., & Albán, M. (2008). Decentralized payments for environmental services: The cases of Pimampiro and PROFAFOR in Ecuador. Ecological Economics (65), 685–698 (noting modest expenditure on enhanced law enforcement made PES contracts more attractive, improved negotiating power of project developers and sent a strong message to households in watershed that illegal use of the land would likely be punished, removing economic incentives to deforest).

11 Hewett, J. at 26. citing Wunder, S. (2005). Payments for Environmental Services: Some Nuts and Bolts. Center for International Forestry Research. Jakarta: Center for International Forestry Research.

12 Coase, R., 1960. "The Problem of Social Cost," 3 Journal of Law and Economics 1, 79-83. (theorizing the efficient distribution of non-private goods or services such as environmental or natural resource protection by trading pollution or exploitation 'rights' via markets between users and providers, provided no transaction costs).

society from capturing the ES market. In contrast, a purely efficiency driven PES system would allow transactions to be made by those supplying the environmental service at the lowest price per unit (assuming perfect market conditions), and poverty alleviation would be seen strictly as a secondary benefit where possible to be enjoyed without extra efforts. However, studies of Latin American PES projects have shown mixed results at best as to the ability of poor communities to benefit from projects that do not target them specifically.[13] Moreover, a strong argument could be made that from a longer-term perspective considering the necessary legitimacy of REDD+ in the eyes of local and indigenous communities where projects are implemented, equity and efficiency goals will need to be harmonized and treated together.[14] Box 1.2 below examines some of the sub-elements of equity that could help determine its role in PES-based REDD+ initiatives.

Box 1.2: Definition of 'Equity' in the Context of REDD

In any intervention type program, of which REDD+ can be understood to be in large part at least during its early years,[15] it is important to identify theoretically how and why the intervention works to achieve its stated goals.[16] In the case of REDD+, theoretical specificity is particularly needed for how equity is defined and how it works towards achieving the stated climate change mitigation and sustainable development goals of REDD+ and the broader UNFCCC umbrella under which it has arisen.[17] Brief reflection on various government and civil society positions regarding REDD+ reveals that 'equity' as a goal may embody a wide variety of theoretical parameters, including most notably the following elements:

- Equitable compensation: all participants' rewards match contributions;
- Equal opportunity: safeguards to ensure poor and marginalized groups have equal chance to participate;
- Poor targeted: poor communities actively recruited, provided equal voice and rewards to all participants although program not exclusively for poor; and
- Poverty alleviation: participation and rewards prioritized to those in greatest need, potentially irrespective of contribution or ability to perform.

13 See, e.g., Miranda, M. et al., 2003. "The social impacts of payments for environmental services in Costa Rica, Markets for Environmental Services Series," n°1, International Institute for Environment and Development, London (noting wealthier landholders took the majority of ES payments in Costa Rican forest conservation PES system); but see, Pagiola, S.,et al., 2008. "Can the poor participate in payments for environmental services? Lessons from the Silvopastoral Project in Nicaragua. Environment and Development Economics" 13 (3), 299–325 (poorer landholders able to provide biodiversity ES in Nicaraguan project and benefit).

14 See generally, Pascual, U. et al., 2010. "Exploring the links between equity and efficiency in payments for environmental services: A conceptual approach," Ecological Economics 69, 1237–1244 ("interdependency between efficiency and equity effects should be considered as a key feature of PES schemes. . . there is no a priori reason why efficiency concerns should prevail over other societal goals such as equity. . .").

15 Like PES, REDD+ may also be conceived of as a contract between buyers and sellers of ecosystem services, which could exist in the long-term without need for any intervention addressing a perceived social or environmental problem.

16 See, e.g., Kautto, P., and Similä, J. 2002. "Recently Introduced Policy Instruments and Intervention Theories," Evaluation January 2005 vol. 11 no. 1 55-68, 12 pp., at 11-12. URL: http://www.evaluationcanada.ca/distribution/20021010_kautto_petrus_simila_jukka.pdf

17 See Singleton, R. and Straits, B., Approaches to Social Research, 3d Ed., (Oxford University Press, 1999). at 435-36.

In descending order from the top of the list above, conditionality may be seen to generally decrease while social co-benefit goals generally increase. All four of the elements above are significant with regard to ensuring that at a minimum REDD+ does not exacerbate the situation of forest communities. The notion of equitable compensation arises from numerous experiences in which forest communities have carried out forest protection work and bore the burden of changes or restrictions in management practices while not equitably benefiting from such actions. Equal opportunity is considered important to prevent against the capture of REDD+ project financing by powerful elite interests. Targeting of poor participants is a more active version of equal opportunity based on the idea of relative need, whereby forest communities are ensured to have equal participation in REDD+ decision making and stake in the proceeds. Finally, notions of equity could grow to the level of making poverty alleviation as the main objective of REDD+, effectively subsuming climate mitigation and forest conservation goals.

Perceptions of equity could depend partly on the extent to which carbon (or its sequestration) may become commoditized (i.e become a good or service with completely fungible units indistinguishable one from another) and thus be traded primarily based on its price. At one extreme, if carbon were a "pure" commodity (i.e., completely price based), equity would seem to have less relevance. To demonstrate this perspective, we may note that society does not preferentially buy other pure commodities (e.g., oil or wheat) from "poor" producer countries simply due to equity notions.[18] Indeed, extreme price based commoditization of REDD+ carbon may obstruct the notion of equity as an unconditional poverty alleviation mechanism operating independently of market realities requiring performance based conditionality. Conversely, here we might recall that society does pay a premium on some socially desirable goods or services from "poor" producers. However, such "social premium commodities" generally exist where a market allows for differentiation across the supply base between goods or services that possess and those that lack such desirable characteristics (e.g., sustainable third party certified traded commodities, such as Forest Stewardship Council timber or organic agricultural produce).

Finding a suitable definition of equity may therefore relate to whether REDD+ is regarded primarily as emissions reduction or poverty alleviation program. Although it seems clear from UNFCCC and most national discussions that REDD+ will incorporate both environmental and development goals, it is not so certain what balance will be found between those goals (and indeed, this could differ from country to country). From a development perspective, the notion of equity in REDD+ could be limited by the practicalities of a given country for forest management to feasibly compel rural poverty alleviation. In many countries planning implementation of REDD+ national programs, the causes of poverty reduction are historically and culturally rooted, and even successful REDD+ programs might not have more than a marginal impact. Perhaps the most practical characterization of the REDD+/equity relationship would recognize that even if REDD+ is largely about reducing forest carbon emissions, poverty alleviation is critical for the permanence of those reductions. Although complex interlinkages exist between poverty and deforestation, much of the world's tropical forests are found in poor areas, and poverty is one of the main underlying conditions of deforestation and forest degradation worldwide.

18 Furthermore, REDD+ will require high transaction and/or funding volume to achieve its mitigation goals, unfortunately something typically associated neither with goods or services produced by social welfare programs nor with international aid.

Exclusivity

Another factor deemed critical for functional PES systems, exclusivity of land rights, has similarly proved challenging for PES efforts to date. In surveys of numerous PES projects in Latin America, households without adequate land tenure have faced difficulties in registering to receive PES payments.[19] Land tenure and equity are closely correlated, as wealthier members of society can monopolize ES payments where tenure is weak or complicated. Traditional access, ownership and use rights systems, especially those in sub-Saharan Africa or Asia, or for many indigenous communities in Latin America, present a challenge for PES payments where such rights are vested in entire communities (often with overlapping hierarchies of rights) rather than a single land owner.[20] Further challenges may issue still in countries where tenure allocation is generally proceeding such as potentially in Vietnam, where (a) the household based tenure system in use may not be suitable for REDD+ benefit sharing, and (b) forest owners may not have access to adequate enforcement of their land rights against encroachers and illegal loggers.[21] Issues relating to exclusivity of land tenure in REDD+ will require closely integrated conversations between REDD+ and forest law enforcement and governance, which has not always been the case in many countries thus far.

To be sure, however, research on land reforms in other contexts (notably agricultural land reform in post-socialist Southeast Asia and Eastern Europe) has shown that the creation or clarification of land tenure alone will not be sufficient to guarantee that landowners will benefit from REDD+. Property rights to land have often proven to be only one among various mechanisms that allow landowners access to benefit streams.[22] In the case of REDD+, benefits may also depend to varying degrees on access to carbon markets, social networks, knowledge and information, and enforcement capabilities (e.g. for sanctioning encroachment and illegal logging). In order to ensure equitable REDD+ benefit sharing, a broader suite of governance reforms in and beyond the forest sector will therefore be needed in addition to tenure reforms.

19 See, e.g. Grieg-Gran et al., 2003. "The social impacts of payments for environmental services in Costa Rica. A Quantitative Field Survey and Analysis of the Virilla Watershed." International Institute for Environment and Development (IIED), London.

20 Knox, A. et al., 2010. "The Interface of Land and Natural Resource Tenure and Climate Change Mitigation Strategies: Challenges and Options," Paper prepared for the Expert Meeting on Land Tenure Issues for Implementing Climate Change Mitigation Policies in the AFOLU Sectors. FAO, Rome, at 10.

21 Brunner, J., correspondence with author. 20 February 2011.

22 See generally, Sturgeon, J.C. and Sikor, T. 2004. "Post-socialist Property in Asia and Europe: Variations on 'Fuzziness.'" Vol. 2, No. 1, 1-17; see also, Sikor, T. and Nguyen, T.Q. 2007. "Why May Forest Devolution Not Benefit the Rural Poor? Forest Entitlements in Vietnam's Central Highlands," World Development Volume 35, Issue 11, November 2007, 2010-2025.

Conditionality

The conditionality element of PES requires payments upon performance, but this would exclude poorer landholders lacking the means to cover upfront costs for registering and recording data on the environmental services provided on their land. Conditionality has rarely been achieved in a strict sense in PES projects worldwide to date (mostly limited to a few case in Latin America).[23] Despite the need for including poorer landholders in PES programs, though, conditionality is essential for REDD+ to work as a proper incentive or it risks becoming a social income distribution or subsidy program. As described in Box 1.3 however, how conditionality is implemented in practice may require a host of further considerations still.

Box 1.3: Conditionality Considerations - Soft or Hard; Efforts or Performance Based?

Conditionality may well be the key ingredient setting apart PES and REDD+ from previous forest conservation and development programs. What is meant by 'conditionality' however, and when is it met?

Some practical lessons may be drawn from conditional cash transfer (CCT) social programs introduced mainly in Latin American developing countries since the early 1990s to encourage social outcomes and investments in human capital among chronically poor populations. CCT programs may be categorized as instituting either 'hard' or 'soft' conditionality, depending on the speed with which benefits are retracted from recipients in case of their non-compliance. Hard conditionality CCT programs such as the Mexican PROGRESA system have demonstrated a strong impact on positive behaviours when targeted at critical stages in recipient decision making.[24] However, such programs require repeated enforcement of compliance requirements (with potentially harsh consequences in some cases) as well as continual awareness of significant changes in opportunity costs of recipients.

Perhaps surprisingly, more lenient soft conditionality CCT programs in Brazil have performed equally well as harder approaches in Mexico.[25] Under the Brazilian Bolsa Familia program, a social worker first visits a family not in compliance with the terms of the agreement in an attempt to address underlying issues, thereby motivating participants to work to comply. Progressively stiffer repercussions take effect in the case of continued non-compliance, eventually resulting in permanent loss of benefits after a year of non-compliance. In conjunction with softer CCT approaches, decentralized approaches in Brazilian and Paraguayan programs have been reported to mitigate institutional opposition that can arise in more centralized programs employing less-respected civil servants from outside the project locale.[26]

23 Bond, I. et al., 2009. "Incentives to sustain forest ecosystem services: A review and lessons for REDD, 5 pp., Natural Resources Issues 16. London, UK: IIED.

24 Hewett, J. 2010. Conditional Cash Transfers: Lessons for Payment of Environmental Services under UN-REDD and REDD+ Agreements, at 4 (describing conditional education scholarship and stipends to poor families for food and school supplies made strictly conditional on 85 percent attendance).

25 Id., at 4. (noting both Brazilian and Mexican programs reduced GINI coefficient income equality by 21 percent).

26 Id., at 9-10. (emphasizing that local case workers with longer-term understanding of the program locale are able to provide targeted assistance to communities most in need and often form a bond with program recipients, thereby enhancing their participation).

Despite the generally successful outcomes of Brazilian and Mexican CCT programs, the extra complexities of conditionality have required not insignificant institutional investments and increased administrative costs from both cash transfer programs.[27] In the case of Brazil, performance incentives from the federal ministry to municipal governments to partially offset *Bolsa Familia's* local implementation costs result in the potential for perverse incentive of municipalities non-reporting on non-compliance in order to continue to receive subsidies.[28] In such a case, additional audits can be necessary to ensure compliance from municipal governments.

Another recurrent question regarding conditionality is whether it should be performance- or efforts -based. Where the former method would link payments directly to a final outcome such as tons of forest carbon sequestered, payments under the latter would be correlated with participants' inputs, such as hours spent by communities in REDD+ related activities. Performance-based measures would have the effectiveness advantage of rewarding environmental outcomes, and potentially also efficiency advantages in more easily measurable outcomes. However, efforts-based conditionality might have equity advantages, such as greater insurance for communities in case of fire or drought and rewarding of all participants, regardless of baseline differences in forest types or forestation levels. To an extent, it would seem that REDD+ cannot function void of any connection with performance if it seeks to achieve its climate mitigation goals. In order to balance environmental and social conditionality, some experts have suggested pure performance valuation may be adjusted to some degree to allow other policy goals to be pursued, but should maintain the bulk of the payment calculation in performance -based terms.[29]

Assuming some variation of performance-based conditionality, then, a further question might be whether short- or long-term conditionality should apply. From a short-term perspective, REDD+ performance would relate predominantly to immediate climate mitigation results, which might (depending potentially on future rules developed by UNFCCC negotiators) as or more readily come from newly seeded monoculture plantations as from intact old growth forests. Such a view would focus overwhelmingly on carbon mitigation aspects and thus tend to ignore the possibility of climate change impacts on such forests themselves (e.g., via droughts or rising heat levels). In contrast, a longer term, more dynamic view of conditionality might consider whether sufficient forest ecosystem resilience is provided to ensure continuing forest survival and thus permanence of carbon sequestration and storage. In the end, forest life cycles would differ according to ecosystem types and other biogeographical factors, and forest scientists would be best placed to inform REDD+ planners regarding performance-based conditionality necessary for optimal long-term forest carbon sequestration and resilience.

27 Id., at 7. (describing extensive central, regional and local government institutional modifications, investments and administrative costs required in both programs).

28 Id., at 8, citing Lindert, K., Linder, A., Hobbs, J., & Briere, B. d. (2007). The Nuts and Bolts of Brazil's Bolsa Família Program: Implementing Conditional Cash Transfers in a Decentralized Context. World Bank, Social Protection. Washington DC: World Bank. ("A recent audit found that 15 per cent of municipalities reported '100% compliance for 100% of students, 100% of the time.'")

29 UN-REDD Vietnam Programme, 2010. "Design of a REDD Compliant Benefit Distribution System for Viet Nam," (hereafter "UN-REDD Vietnam Report") 191 pp., at 113-114.

In order to maintain a balance of adequate conditionality and equity by covering participants' initial costs, PES proponents emphasize timing payments periodically, with sufficient payments or in-kind benefits upfront so as to facilitate poorer landholders' participation.[30] In case of breach of contract, ensuring compliance can be difficult if based only on non-payment or civil lawsuit for breach of contract and damages (a slow procedure and potentially futile in the case of insolvent landholders). One method to help ensure conditionality is to structure the PES contract as a conservation easement, such that immediate injunctive actions may be brought against landholders violating the easement terms.[31]

Mexico presents one interesting example of payments targeting poor and disadvantaged groups equitably in a methodology that also seems highly efficient. Under the Mexican Payments for Hydrological Environmental Services (PSAH) scheme, all landholders who have current rights to land can register for the program, and those applicants potentially eligible for performing the relevant environmental services to receive payments under the program are ranked according to a long list of social criteria (favouring indigenous, women, and communities over wealthier private landholders). Following this initial ranking, PSAH then favours applications from larger more compact land areas, as this favours biodiversity conservation and water filtration, in addition to greater carbon mitigation.[32]

Other means for increasing equity of payment distribution without sacrificing effectiveness of carbon sequestration may be gleaned from the following examples:

- In Cambodia, the Oddar Meanchey REDD project bundles 13 community forestry sites comprised of 58 villages to reduce transaction costs while still making payments to landholders individually.[33]
- Pilot testing in Mexico helped develop the simplified Plan Vivo monitoring and verification scheme, which has helped participant driven PES projects in 10 countries avoid paying high costs to private verification services.[34]
- Ecuador has increased payments to smaller landholders relative to larger landholders by basing payments per hectare inversely proportional to the overall size of landholdings registered under its Socio Bosque project.[35] However, this approach will likely require tailoring to account for indigenous groups with large landholdings that could receive fewer benefits per hectare as a result.[36]

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30 See van Noordwijk, M. et al., 2008. "Reducing emissions from deforestation and forest degradation (REDD) in Indonesia: options and challenges for fair and efficient payment distribution mechanisms," p. 21. Working Paper 81. Bogor, Indonesia: World Agroforestry Centre (ICRAF).

31 Chomitz, K. et al., 1999. "Financing environmental services: The Costa Rican experience and its implications," Science of the Total Environment, 240, 157–169, at 160 (citing example of Costa Rican "KLINKI Activities Implemented Jointly/Joint Implementation" project).

32 Federal Government of Mexico, 2010. "Operational Rules of the ProArbol Programme," Official Diary of the Sixth Session of the National Forestry Commission (CONAFOR), Programa ProArbol at 33-34. URL: http://www.conafor.gob.mx:8080/documentos/docs/6/300Reglas%20de%20Operaci%c3%b3n%20Pro%c3%81rbol%202010.pdf.

33 Bradley, A. 2010. "Oddar Meanchey CF REDD: Bringing Cambodia's first REDD project to market," at 2. Pact Cambodia, (presentation), URL: http://www.iges.or.jp/en/news/event/isap2010/pdf/day1/Bradley.pdf (last checked 21 Nov 2010).

34 Plan Vivo, "Project Fact Sheet: Scolel Té Fact Sheet," at 2, URL: http://www.planvivo.org/wp-content/uploads/Scolel_Te_factsheet.pdf (last checked 21 Nov 2010).

35 See Lodoen, D. "Payments for environmental services: A matter of scale in Ecuador and Colombia." Center for International Forestry Research (CIFOR), Web story, URL: http://www.cifor.cgiar.org/Headlines/PES+a+matter+of+scale+in+Ecuador+and+Colombia.htm (last checked 21 Nov 2010).

36 See TEBTEBBA, 2008. Summary Report of the Global Indigenous Peoples' Consultation on REDD, Baguio City, Philippines, 12-14 November 2008," at 12. http://www.tebtebba.org/index.php?option=com_docman&task=doc_download&gid=289&Itemid=27 (last checked 21 Nov 2010). (". . . Proposed Socio Bosque payments are unequal: as IPs are large landowners, payments they receive per hectare are lower than for small scale owners (ranging from 5 to 30 USD per hectare).")

- The Kyoto: Think Global Act Local project has demonstrated methods for reducing forest carbon project transaction costs by training communities worldwide to do carbon inventorying.[37]

Key Points:

- Successful PES-based REDD+ schemes will need to take into account a number of factors, including primarily equity, exclusivity, and conditionality, all of which must be balanced to achieve successful outcomes.
- Equity may be defined in various ways, but generally will include fair benefit sharing with and within the poorest communities to avoid monopolization by the wealthiest and/or most powerful members of society.
- The wide variety of land tenure rights found throughout regions and communities makes exclusivity a difficult goal to attain and requires flexible and integrated conversations between REDD+ and national land governance regimes.
- Conditionality, while essential for fair implementation and ensuring benefits match performance, may require tailoring to meet local realities, possibly including structuring payments periodically and/or as a conservation easement.

1.1.3 Varieties of PES at the National Level

As noted earlier, PES programs may take a wide variety of forms, the more commonly known of which include self-organized private deals (e.g. downstream water user paying for upstream forest conservation), open market-based transactions under a cap-and-trade regulation, eco-certification schemes, and public payment schemes.[38] Of course, the international side of REDD+ could entail a regulatory cap on carbon emissions driving financing either via a private market for carbon credits or government funding for forest carbon emissions reductions (or possibly some mix of the two). Similarly, international REDD+ funds or credit purchases could reach PES projects at a national level either via state channels (typically envisioned in the form of national REDD+ funds) or by private sales of the carbon credits generated from a PES/REDD+ project on the carbon market. REDD+ itself has been described as a multiple level PES scheme, given that the two sets of payments may both essentially be PES transactions.

Public PES

Research has found direct, user-financed PES to provide more efficient outcomes than indirect, state-financed PES schemes.[39] This is not surprising, given the greater conditionality to be expected from direct

37 See generally, Skutsch, M (ed.) 2010. Community forest monitoring for the carbon market. Earthscan, London. (explaining results from project implemented from 2003-2009 in communities in East and West Africa, the Himalayas and Papua New Guinea).

38 Waage, S. et al., 2005. "A Guide to Conducting Country-level Inventories of Current Ecosystem Service Payments, Markets, and Capacity Building," at 13. Washington DC, USA: Forest Trends.

39 Wunder et al, 2008. "Taking stock: A comparative analysis of payments for environmental services programs in developed and developing countries," Ecological Economics, 65, 834 – 852, at 851. ("The user-financed programs in our sample were better targeted, more closely tailored to local conditions and needs, had better monitoring and a greater willingness to enforce conditionality, and had far fewer confounding side objectives than government- financed programs. Time and again, the design and operation of government-financed programs was found to be hijacked for many alternative purposes.")

ES buyers than from indirect state (or intergovernmental) funders. Nonetheless, direct PES deals work easier for ES that either function within a short range or that have a specific defined relationship between buyer and seller (e.g. seller's forest conservation for buyer's downstream water catchment, seller's reforestation for buyer's carbon offset under a regulatory carbon cap). Of course, the 'public good' benefits of different environmental services may be distributed locally, regionally or globally; the latter being the case of greenhouse gases such as carbon. As a result, large-scale, direct user-financed transactions are not likely feasible for such ES in the absence of binding international or national regulation, and state-financed PES often provides an important 'second-best' means of harnessing payments from many global ES users to pay for multiple ES providers. Furthermore, from a supply-side perspective, state-financed PES schemes may have greater cost-effectiveness due to economies of scale in transaction costs.[40]

Public or indirect state-financed PES would not be without risks, however. In particular, public PES could result in higher transaction costs (due to the greater number of government levels involved), increased potential for misappropriation of payments, and potential public distrust of governments handling public funds on behalf of resource owners or community ES providers. To an extent, these risks might be overcome by designating independent and trusted institutions to manage funds and by instituting multi-stakeholder governance of PES schemes and their implementation.

At the national level, implementing countries have available a variety of PES-type payment schemes to choose from for delivering benefits to the PES/REDD+ projects in their jurisdictions. Many Latin American countries already have begun incorporating a variety of both private (user-financed) and public (state-financed) PES systems, as well as anchoring their PES programs cross-sectorally into their national policies. Mexico and Costa Rica provide two famous pioneering examples of cross-sectoral public PES efforts. Under the Mexican PSAH program to curb deforestation and enhance aquifer recharge (described above), 96 percent of funds derived from an earmarked share of municipal water-use fees are assigned to payments to forest owners to protect forests.[41] The Costa Rican national PES program provides

40 See Engel, S. et al., supra note 5, at 666.

41 IIED, 2007. "Case Study: Mexico – National PSAH Programme," Watershed Markets (website). URL: http://www.watershedmarkets.org/casestudies/Mexico_National_PSAH_eng.html (noting a similar PES program was implemented in 2003 to promote biodiversity conservation and carbon sequestration via agroforestry).

payments for four forest conservation ES (carbon, water, biodiversity, and scenic beauty) derived from a national fund based on both a 3.5 percent tax on gasoline sales as well as bi- and multi-lateral funds. Significantly, since implementing their programs, both Mexico and Costa Rica are working to improve on acknowledged inefficiencies in early program designs in order to better target payment recipients and integrate payments from individual ES users with their public finance systems.[42]

Intergovernmental Ecological Fiscal Transfer

Recent developments in thinking support the expansion of the general idea of PES beyond the classical definition of payments to individual landholders to include payments between government agencies or other organizations for performance in broad programs or policies. The essential element that would keep this latter sub-group still classified as PES, and not a subsidy, is the performance-related conditionality of the payment. An example of this broader PES notion is the policy of intergovernmental fiscal transfers, which channel public finance from national and regional governments to local governments to compensate for expenditures made by the latter to provide public goods or services.[43] Such transfers can act as an incentive to local governments to improve and protect air, water, and natural resources inside their boundaries, but often have significant benefits beyond their borders as well. Conditionality is created in such transfers typically via earmarking grant funds and with clear, mutually-agreed objectives and terms. Verifiability of projects and measurability of benefits promoting environmental sustainability are also standard requirements for transfers. The Brazilian case below provides an example of an intergovernmental fiscal transfer in the ICMS Ecológico, a sales tax in several states that distributes revenues to local governments to fund forest conservation areas. Additionally, in November 2009, the Indonesian Ministry of Finance released a green paper suggesting an intergovernmental fiscal transfer approach to funding sub-national implementation of its REDD+ projects and programs (discussed in the chapter on forest concession revenue sharing approaches below).[44]

Key Points:

- Financing for PES-based REDD+ schemes can be public, private, or a mix of the two.
- Public payments are sometimes the only choice due to regulatory structure, and they often provide the most cost-effective approach, despite a number of potential risks.
- Intergovernmental fiscal transfers may allow for PES-based REDD+ financing to be made between government agencies and/or localities rather than just direct payments from state to landowner.

42 See, Pagiola, S., 2006. "Payments for Environmental Services in Costa Rica," Unpublished MPRA Paper No. 2010, posted 07. November 2007. URL: http://mpra.ub.uni-muenchen.de/2010/ (last checked 15 Nov 2010); See also, Wunder, S. 2008, supra note 40, at 851.

43 See Kumar, S. and Managi, S., 2009. "Compensation for environmental services and intergovernmental fiscal transfers: The case of India," Ecological Economics 68, 3052-3059, at 3053.

44 Indonesia Ministry of Finance, 2009. "Ministry of Finance Green Paper: Economic and Fiscal Policy Strategies for Climate Change Mitigation in Indonesia," Ministry of Finance and Australia Indonesia Partnership, Jakarta, at 12. URL: http://www.fiscalpolicyforclimatechange.depkeu.go.id/pdf/var/green_paper_final.pdf (last checked Nov. 21, 2011).

1.1.4 National PES Policy Approach Example: Brazil

Brazilian Background

Brazil provides an example of a country implementing REDD+ within an overall PES national policy approach to environmental conservation. Although many elements are yet to be finalized at the time of writing, Brazil has a well-developed national REDD strategy within a relatively coherent overall national climate change and sustainable development plan. Additionally, a working national REDD+ fund and a number of relatively advanced federal and state level government projects and policies provide Brazil with strong capacity from which to develop its eventual REDD+ benefit sharing regime. A diversity of actors with divergent livelihoods in and around the Amazon forest suggests PES may account for just one of several REDD+ benefit sharing strategies in Brazil, as described in Box 1.4 below.

Box 1.4: Pressures from Inside & Outside Forests in Brazil[45]

REDD+ pilot projects and PES programs are under development and being considered throughout Brazil, in response to the intense pressures on forests throughout its multitude of diverse ecosystems. Arguably, however, reducing Amazon deforestation and forest degradation lies at the core of the Brazilian REDD+ strategy, given the size and importance of the Amazon forest in the global carbon budget. Brazil is home to just over five out of a total seven million square kilometres of tropical forest spanning nine countries that make up the entire Amazon region. Socioeconomic indicators for Amazonian populations show them to be among the poorest and most vulnerable in Brazil, and many lack health care, education, and the means to generate personal incomes. As such, Amazon populations are especially dependent on their forest resources. However, Brazilian deforestation can be traced both to the need to provide long-term sustainable incomes for local and indigenous communities living inside forests as well as pressures from large-scale commercial operations such as soy and cattle ranching. The latter types of pressures often originate exogenously, converting forest to pasture and cropland in both the Amazon and drier Cerrado forest. As in many other implementing countries, questions of who should receive what benefits will require continued consideration to make REDD+ part of a sustainable solution to deforestation and forest degradation in Brazil.

National REDD+ planning in Brazil

Brazil has yet to finalize its national REDD+ strategy, but it seems probable that many elements of its well-developed PES/REDD+ federalist system will continue to play major roles. It looks likely that Brazil will adopt a hybrid approach for REDD+ benefit distribution that combines a national fund and direct PES landholder payments via a nested approach of sub-national level projects within a national framework.[46]

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45 Sources: Verner, D., 2004."Poverty in the Brazilian Amazon: an assessment of poverty focused on the State of Para," Policy Research Working Paper Series 3357, The World Bank; Chomitz, K., 2007. "Poverty and Deforestation: At Loggerheads? Agricultural Expansion, Poverty Reduction, and Environment in the Tropical Forests," World Bank (online article) URL: http://go.worldbank.org/5I9M8XYBW0 (last checked 15 Nov 2010) ("In the Brazilian Amazon, about 80 percent of deforestation occurs in clear-cuts of 20 hectares or larger, reflecting commercial-scale activities rather than that of households.").

46 See Pricewaterhouse Coopers, 2010. "National REDD+ funding frameworks and achieving REDD+ readiness – findings from consultation," Report for the Conservation Finance Alliance, at 21 (noting Brazilian Committee on Environment and Sustainable Development draft bill No. 5586 on REDD+ setting out national benefit-sharing scheme).

If a nested approach is chosen, this will attract carbon buyers, given their ability to directly choose from which project they purchase credits.[47] The national Amazonas fund[48] and state climate change funds likely will continue to pay for ecosystem services, including reduced deforestation and forest degradation, and state authorities likely will continue to take a portion of revenues from carbon credits sold under their respective initiatives to fund administration and monitoring costs. It is also probable that Brazilian states will continue to play a major role in PES/REDD+ policy and project implementation.

Under the federalist system of Brazil, states currently have the power to grant commercial rights to persons or corporations to pursue reforestation projects and thus the right to manage sales of carbon credits.[49] Given Brazil's size, states have an important role in managing projects and distributing payments, and it would seem impractical for Brazil to adopt a centralized national approach that attempts to take this power back from states. In recent years, various states have promoted the development of REDD pilot projects incorporating important PES aspects, even if all do not qualify as 'pure' PES programs. As of December 2009, at least seven PES/REDD pilot projects were in advanced stages of implementation in Brazil, funded variously from sales of carbon credits, state, and federal climate funds, and donations from private corporations, NGOs, and philanthropic organizations.[50]

As in many REDD+ implementing countries, a PES project based approach may pose difficulties for Brazil in the early years of implementation, in large part due to difficulties in identifying and paying correct land stewards to avoid deforestation or restore degraded forests. A 2009 study found that over two-thirds of future deforestation in the Brazilian Amazon is anticipated to occur on land with unclear tenure, and close to 10 percent more on forests marked as strictly protected areas (thus ineligible for compensation).[51] However, the federal Terra Legal (Legal Land) Program[52] was promulgated in June 2009 to rectify land tenure problems, aiming to define property rights via new norms and thus establish ownership for 80 percent of private holdings by 2012.[53]

Benefit distribution in Brazil: Juma Project and scaling-up challenges

Of REDD+ projects in Brazil, the Juma Project in the Amazonas state is perhaps the most celebrated example. As the first REDD project worldwide to receive a Gold rating from the Climate, Community and Biodiversity Alliance (CCBA) for its social and environmental benefits beyond carbon sequestration,[54] Juma provides a good model of PES/REDD+ benefit distribution at the project level. Juma is managed by the private not-for-profit organization Amazonas Sustainable Foundation (FAS), which under agree-

47 Id., at 38.

48 The Amazonas Fund is based on public grants & corporate donations rather than offset market cap-trade finance.

49 See Law on the Management of Public Forests, 2006. (Law no. 11.284), Art. 16, para. 1.

50 Cenamo, M. et al., 2009. "Casebook of REDD Projects in Latin America," IDESAM, at 28-41.

51 Börner, J. et al., 2010, supra note 4, at 1281.

52 Legal Land Program, n. 11952/2009.

53 Champagne, E. and Roberts, J., 2009. "Case Study: Brazil," pp. 125-137, at 130-13, in Costenbader, J. (Ed.) 2009. Legal Frameworks for REDD. Design and Implementation at the National Level. IUCN, Gland, Switzerland. xiv + 200 pp., (hereafter "Legal Frameworks for REDD").

54 See Climate, Community & Biodiversity Alliance, 2008. Online announcement (last checked 14 Nov 2010). URL: http://www.climate-standards.org/pdf/release_juma_english_v_1_0_2.pdf.

ment with the Amazonas state, acts as the sole legal entity managing forestry PES including REDD. FAS distributes revenues from voluntary emission reduction transactions via cash and in-kind investments to forest community associations as well as via payments to families for their forest protection activities within protected areas. One hundred percent of the annual emission reduction revenue is invested in the project activities as stated in the project design document, of which 30 percent is forwarded to Bolsa Floresta Program and to local communities. This resource is applied following four components, of which three of them (Social, Income, and Association) are decided after group decision workshops organized by FAS. Community in-kind benefit investments include improved access to clean water, healthcare, education, and sustainable business activities. Finally, the Family component consists of a monthly grant to local households made on personal debit cards (in cooperation with a partner bank involved in the project).[55]

Juma is just one of a handful of examples of tailor-made PES/REDD+ benefit distribution systems already being implemented at a project level in Brazil and worldwide. However, it will be important to consider how easily such detailed project level approaches can be replicated and scaled up to a national scale. In particular, the fine-tuned opportunity cost estimations and contractual arrangements of such projects will need to be met accurately to avoid over- or under-payments at a state or national scale. Simultaneously, implementation and transaction costs will need to be minimized in order to ensure the broadest possible reach of payments.

Public PES Initiatives in Brazil

In addition to its REDD+ projects and policies, Brazil already hosts a wide range of PES and quasi-PES legal and policy instruments at both state and federal levels. A variety of tax-based PES or quasi-PES mechanisms exist and are under development currently in Brazil. These include a bill for federal income tax deductions for donations to ecological charities,[56] and state and federal property tax deductions for creating natural heritage reserves from private lands that are registered within the Brazilian protected areas system.[57] Water usage fees are distributed via local community committees to watershed reforestation and conservation projects.[58] Also, several Brazilian states have begun an intergovernmental fiscal transfer initiative based on "ecological sales taxes" (ICMS Ecológico), which fund municipal governments' creation and management of protected areas.[59] Although these programs all represent important first steps for a network of national PES approaches in Brazil, critics contend that many of these programs lack adequately rigorous funding guidelines for payments, resulting in benefit distribution

55 Fundação Amazonas Sustentável (FAS), 2009. "The Bolsa Floresta Program" (online overview of program). Available at http://www.fas-amazonas.org/en/index.cfm?fuseaction=conteudo&id=19. See also FAS, 2008. "The Juma Sustainable Development Reserve Project: Reducing Greenhouse Gas Emissions from Deforestation in the State of Amazonas, Brazil. Project Design Document (PDD)". at 71-72.

56 Imposta de Renda Ecológico, Projeto de lei 5974/05, 29 August 2007.

57 Reserva Particular do Patrimônio Natural, RPPN (Private Natural Heritage Reserve), established under artigo 21 da Lei nº. 9.985, 18 July 2000.

58 Lei nº 9.433, 08 January 1997 (Lei da Política Nacional de Recursos Hídricos).

59 The "ICMS Ecológico" (Imposto sobre Circulação de Mercadorias e Serviços Ecológico) has been adopted with varying degrees of success in Paraná (1992), São Paulo (1993), Minas Gerais (1995), Rondônia (1996), Amapá (1996), Rio Grande do Sul (1998), Mato Grosso (2001), Mato Grosso do Sul (2001), Pernambuco (2001), and Tocantins (2002). See generally, Lerda, D. and Zwick, S., 2009. "A Brief Tour of Brazilian Payments for Ecosystem Services," Katoomba Group Ecosystem Marketplace. URL: http://www.ecosystemmarketplace.com/pages/dynamic/article.page.php?page_id=6524 (last checked 1 Nov 2010). (noting that a lack of strict earmarking on funds for conservation use under ICMS approach allows local governments to fund programs as they choose, with unintended consequences). But see Ring, I., 2008. "Integrating local ecological services into intergovernmental fiscal transfers: The case of the ecological ICMS in Brazil," Land Use Policy 25, 485–497, at 495 (answering critiques of ICMS lumps-sum transfers' lack of conditionality that "there are also a number of arguments in favour of lump-sum transfers, such as guaranteeing maximum financial autonomy to local jurisdictions.").

inefficiencies among local governments and recipients.[60] Brazil has yet to finalize a national PES policy at the time of writing, although various federal bills are under development that might coordinate and harmonize its PES programs.[61]

1.1.5 National PES Policy Approach Example: Vietnam

PES had been discussed in general terms in Vietnam since 2005.[62] In 2008 the Government of Vietnam (GOV) released its "Pilot Policy for Payment for Forest Ecosystem Services," and already the national PES system has been hailed by many as a regional leader[63] and has been adopted in Cambodia, Laos, and Thailand.[64] After initial PES projects were conducted in pilot sites in two provinces, in December 2010, GOV issued a decree expanding the 2008 PES decree to a national scale under the "Forest Protection and Development Fund," which at time of writing is still in pilot mode.[65]

From the rich body of literature on forest management and benefit sharing issues in Vietnam, two lessons stand out in particular from PES experiences to date. First, the design and implementation of PES in Vietnam could help inform work regarding the valuation of forests and forest lands necessary to determine payments. Second, differences between PES and REDD+ legal and institutional frameworks in Vietnam suggest potential hurdles in integrating the two regimes in the long run.

Payment valuation lessons for REDD+ in Vietnam

Instead of a general tax-based system collecting funds into a general budget, the fund operates by collecting money from industrial water users benefiting from intact forests and distributes it to individual households that work to maintain those forests. The main sources of payments are hydropower and wa-

60 See Lerda, D. and Zwick, S., Id.

61 Proposed substitute bills are 792, 1.190, 1.667, 1.920, 1.999 and 2.364.; See also Projeto de Lei 792 (2007) introduced by Deputy Anselmo de Jesus (PT-Roraima) and Projeto de Lei 1190 (2007) authored by Deputy Antonio Palocci (PT-São Paulo).

62 See generally, Wunder, S., et al. 2005. "Payment is good, control is better: why payments for environmental services so far have remained incipient in Vietnam." Center for International Forestry Research, Bogor, Indonesia.

63 See, e.g., Jenkins, M. 2010, Speech to Katoomba Group Meeting XVII, Hanoi. URL: http://www.katoombagroup.org/events/vietnam_2010/agenda.php

64 Government of Vietnam. Decision No. 380/QD-TTg on Pilot Policy for Payment for Forest Ecosystem Services (10 April 2008).

65 Government of Vietnam. Ministry of Agricultural and Rural Development. Decision No. 114/2008/QD-BNN on Forest Protection and Development Fund (28 November 2008). (A separate fund is planned to cover wetlands, including mangrove forests.)

ter supply companies, and the main payment recipients are rural farmers.[66] Payments from water user industries were calculated according to a complex system of "K coefficient" weighted factors for valuing the forest's ecosystem services monetarily, based in part on the type and status of forest at issue.[67] The system of valuation has not been without reproach from local communities and government reviews, however, which have criticized arbitrary outcomes of the forest classification system,[68] delays and potential for mistakes and disagreements in adopting K coefficients.[69]

An October 2010 study conducted by UN-REDD and GOV determined that REDD+ benefit sharing in Vietnam should use a system of "R coefficients" based on lessons from the Vietnam PES system. Specifically, the study's authors found that the R coefficients should be based on performance (i.e., payments differentiated according to carbon stocks). The authors further recommended that potential differences in payments to communities should be mitigated by funds from other projects (e.g., projects with social objectives).[70]

Potential delays in integrating PES and REDD+ in Vietnam

The case of Vietnam demonstrates a potential incongruity between PES and REDD+ country systems and their related benefit sharing mechanisms. Despite the relatively advanced state of PES in Vietnam, and the extensive preparatory research and policy lessons for a national REDD+ system, REDD+ does not appear to readily integrate with PES. First, PES buyers in Vietnam are entirely local and are legally obliged (e.g., water utilities, industries, or dam operators), whereas REDD+ currently functions by virtue of funds or purchases of international donors or carbon buyers. Similarly, prices and monitoring procedures are determined locally and with a high level of discretion in the case of PES but under REDD+, prices are set by the global market or a fund, and monitoring determined by international agreement. Finally, PES funds may be pooled for various services (e.g., carbon, water, ecotourism), whereas REDD+ funds are kept isolated with safeguards in order to ensure accountability and help in MRV of actions.[71]

66 Brunner, J. correspondence with author, 15 April 2011. See also, Ecosystem Marketplace, 30 June 2010. "Vietnam Implementing Nationwide Payments for Forest Ecosystem Services," URL: http://www.ecosystemmarketplace.com/pages/dynamic/article.page.php?page_id=7605&section=news_articles&eod=1

67 Santiago, C. 2010. "The Prospects for Payment for Ecosystem Services (PES) in Vietnam," in Beyond Borders: PES and REDD in the ASEAN Region. Ecosystem Marketplace, at 29-30. See also, UN-REDD Vietnam report, supra note 30, at 35-36.

68 UN-REDD Vietnam report, supra note 30, at 35. (noting ". . . payments for natural forests are always higher than for planted forests, even though the latter may provide better ecological services.")

69 Id. (noting ". . . only 10 percent of the total has been actually distributed to local community so far, partly because of the difficulties in delineating K factor zoning on the ground.)

70 UN-REDD Vietnam report, supra note 30, at 35-37.

71 Hung, Pham Quoc. 2010. "Designing REDD+ Benefit-Sharing Systems in Vietnam," Directorate of Forestry of Vietnam (VNDoF) Ministry of Agriculture and Rural Development (MARD). Presentation to REDD+ Partnership Workshop on Enhancing Coordinated Delivery of REDD+: Emerging Lessons, Best Practices and Challenges, 26 November 2010, Cancun, Mexico.

1.2 Participatory Forest Management Approach

1.2.1 Decentralized Forest Governance & Participatory Forest Management

Much of REDD+ planning to date has emphasized national scale government planning and implementation in addressing tropical forest carbon emissions, which has been noted as potentially setting in motion a process toward more centralized forest governance.[72] Given the promising returns from decentralized forest governance across many parts of the world in recent decades, it seems essential that REDD+ build on such experiences, in particular those falling under the realm of participatory forest management (PFM).

The practice of PFM began in Asia in the mid-1980s and soon spread to Africa.[73] PFM originated generally in government led initiatives to increase efficiency of forest management by increasing local community control and to reduce the poverty of those living in and around forests. PFM is not incompatible with PES approaches, and indeed many PFM proponents and programs are turning their attention to including PES in their portfolio of work.[74] In many countries, PFM offers strong promise as a decentralized management strategy to include small landholders in a future REDD+ delivery system. However, institutional barriers and transaction costs of PFM present challenges that will need to be addressed, as will be discussed.

Decentralization and devolution of state power is inherent in most PFM approaches, whether democratic (i.e., citizen participation via empowered local government), or via non-state organizations (e.g., community or stakeholder groups).[75] PFM may include a range of centralized and decentralized scenario choices, from provincial or district level authorities, groups of forest user stakeholders, and traditional authorities. Numerous studies on PFM and forest management in recent years recommend that decisions on structuring benefits be devolved to local governance levels to include community actors, given the differences in cultures and norms across any given country.[76]

Many permutations of PFM exist according to how schemes are structured, who is included, actors' roles, and the overall goals of the PFM type.[77] To simplify discussion for this paper, PFM is used generally to mean two main types of social forestry whereby central governments devolve management authority to lower

72 See generally, Phelps, J. 2010. "Does REDD+ Threaten to Recentralize Forest Governance?" Science, Vol. 328 no. 5976, 312-313.

73 Wily, L.A., 2002. "Participatory forestry in Africa: an overview of progress and issues. In Second International Workshop on Participatory Forestry in Africa: Defining the Way Forward: Sustainable Livelihoods and Sustainable Forest Management through Participatory Forestry," pp. 31–58. Proceedings of the Second International Workshop on Participatory Forestry in Africa 18–22 February 2002. FAO, Rome, Italy.

74 See, e.g. RECOFTC, 2007. "Sharing the Wealth, Improving the distribution of benefits and costs from Community Forestry: Policy and Legal Frameworks. Synthesis of discussions at the Second Community Forestry Forum, 21-22 March 2007, Bangkok, Thailand," RECOFTC, FAO and SNV, Bangkok, at 1.

75 Larson, A. and Ribot, J. 2009. "Lessons from forestry decentralisation", pp. 175-187, in Angelsen, Arid (ed.) Realising REDD+: National strategy and policy options, at 182-183 (citing decentralisation options).

76 See, e.g., Mahanty, S. and Guernier, J., 2008. "A Fair Share: Sharing the benefits and costs of community-based forest management." Paper for IASC 2008 Theme on Understanding the Benefits of the Commons, at 11; see also UN-REDD, "Knowledge and Lessons Implementation Framework: Designing a Benefit Distribution System," at 2.

77 Christy, L.C. et al., (2007). Forest Law and Sustainable Development: Addressing Contemporary Challenges through Legal Reform. The World Bank, Law Justice and Development Series, at 88-89.

levels. Under community forest management (CFM), forestry activities occur on land that has been devolved to communities or continues to be community owned and managed. In contrast, under joint forest management (JFM), also commonly referred to as Collaborative Forest Management, governments retain ownership of forest land and villagers are allowed to live in and benefit from forest resources.

1.2.2 Types and distribution of PFM benefits

Depending on the scenario chosen, PFM can provide a range of benefits in addition to carbon financing to communities involved:,from eco-tourism revenue and sustainable sales of commercially valuable timber species to access to and use of firewood, fodder, and non-timber forest products (NTFP) such as fruits and nuts.[78] Increasingly, PFM proponents are recognizing the importance of combining sustainable local forest management with avoided deforestation due to the high opportunity costs from strict avoided deforestation for forest-dependent communities.[79] Similarly, although not conclusive given the wide range in factors affecting forest operations profitability, some studies have shown that supplemental carbon sequestration financing would help make returns from reduced-impact logging (RIL) sufficient to be adopted at a wide scale in areas where RIL to date has been less profitable than conventional logging.[80]

Equitable vertical and horizontal benefit distribution has been a challenge for PFM since the earliest days of its development, both in Africa and Asia. For REDD+ projects to build off PFM efforts in many countries, safeguards to improve transparency of state decision making, accountability of state actors, and equitable distribution of benefits will be critical.[81] Not only are large shares of revenues from PFM activities often officially retained by the state in many countries, legal and policy controls on PFM can pose further difficulties for communities to acquire any benefits promised. In many Asian countries, constrictive controls exist on commercial use of timber and forest products from PFM forests, which create opportunities for rent seeking from officials.[82] Uncertainty can also arise when harvesting permits are cancelled without explanation or due process.[83] Administrative difficulties often occur in PFM where identical or more complex rules and permitting procedures are required of small-scale village forestry operations than for commercial logging.[84]

78 Murdiyao, D. and Skutsch, M., 2006. "Promoting Carbon Benefits from Community Forest Management," at 11, in Murdiyao and Skutsch (ed.) Community Forest Management as a Carbon Mitigation Option: Case Studies, Bogor, Indonesia: Center for International Forestry Research (CIFOR), 2006.

79 See, e.g., Bhaskar, S. and Skutsch, M. 2010. "Cost of Carbon Abatement through Community Forest Management in Nepal," Ecological Economics 69, 666–672 (noting CFM seen as cheapest policy measure to abate carbon emissions in Nepal, but avoided deforestation should be combined with sustainable forestry management in order to offset opportunity costs); see also, Skutsch, M., 2010. "Crediting carbon in dry forests: The potential for community forest management in West Africa," Forest Policy and Economics 12, 264–270 (noting if both reduced degradation and enhanced stocks included in REDD+ then communities would have significant incentive to participate if even 10 percent of benefits returned to them).

80 Phat, N.K. et al., 2004. "Appropriate measures for conservation of terrestrial carbon stocks—Analysis of trends of forest management in Southeast Asia," Forest Ecology and Management 191 (2004) 283–299, at 298 (finding supplemental carbon payments likely would make RIL returns sufficient to be adopted wide-scale in ASEAN countries); See also, Putz, F.E., et al. (2008) "Reduced-impact logging: Challenges and opportunities," Forest Ecology and Management 256 1427–1433, at 1430 (noting conditions affecting profitability of forest operations, improved carbon retention of RIL relative to conventional logging, and potential role of forest carbon payments).

81 See Blomley, T. and Lukumbuzya (forthcoming), "Community Forestry and REDD+: Lessons from Tanzania," The World Bank, at 10.

82 Mahanty, S. and Guernier, J., supra note 80, at 7.

83 Id., at 7.

84 RECOFTC, 2007, supra note 78, at 7.

In order to achieve higher potential profits from sustainable timber and forest product sales, research on CFM projects in Cameroon demonstrates the need for better access to markets and increased capacity and start-up funding.[85] However, expanded market access, even in order to enable sustainable forest productive activities such as NTFPs and RIL, could well have perverse outcomes if adequate planning and precautions are not taken. Road construction in forested areas has been found to be one of the strongest drivers of tropical deforestation by allowing access to non-sustainable activities such as illegal logging, mining, and charcoal production.[86]

In terms of horizontal distribution of benefits within local and indigenous communities, elite capture has been cited as a problem in both CFM and JFM that consistently threatens to undermine such initiatives.[87] A 2009 survey of PFM in Asia found high initial capital costs and skills required of more profitable PFM opportunities to preclude poorer households, often leaving them only opportunities with marginal returns, a finding corroborated by past research.[88] PFM proponents in Nepal have addressed elite capture by incorporating a greater household or group level focus, including interventions to improve their representation in community forest governance councils.[89] Pro-poor approaches have also been used with success to identify poor groups typically excluded from PFM programs and develop mechanisms to ensure their participation in local forest governance groups.[90]

Key Points:

- Participatory Forest Management can be implemented through community forest management, where the community takes the lead in managing land, or joint forest management, where the government retains ownership of land but allows villagers to live on and benefit from it.
- Effective vertical integration of PFM requires responsible state action, often achieved through regulatory transparency and state accountability, and equitable administrative rules throughout different sectors and levels of government.
- A balance will need to be achieved to ensure adequate market access for PFM profitability but prevent against increasing access to the extent that it accelerates deforestation and forest degradation.
- Targeted pro-poor participatory approaches, equitable forest governance, and streamlined regulations for poor communities all can help to overcome high initial capital costs, elite capture, and other horizontal barriers to profitable PFM among poorer communities.

85 See, e.g., Ingram, V., 2010. "Costs, Benefits and Impacts of Community Forests on Livelihoods in Cameroon," CIFOR, Presentation from Taking stock of smallholder and community forestry: Where do we go from here? Workshop, Montpelier, March, 2010.

86 See, e.g., Barreto, P. and Silva, D., 2010. "Will cattle ranching continue to drive deforestation in the Brazilian Amazon?" Institute of People and the Environment (IMAZON) at 4.

87 See, e.g. Blomley and Iddi, 2009, at 41.

88 Mahanty, S. et al., 2009. "Sharing the benefits and costs of collaborative forest management," International Forestry Review, Vol.11(2), 2009, 268-280, at 276; See also, Moss et al., 2004. "Participatory Forest Management and Poverty Reduction: a review of the evidence," Overseas Development Institute. Prepared for the Start-up workshop of the project: "Action Research on Assessing and Enhancing the Impact of Participatory Forest Management on the Livelihoods of the Rural Poor." Nairobi, Kenya, at 30 ("Reports for developing countries suggest that the persistently poor (those who remain in that condition despite earlier stages of development) have often only derivative possibilities of benefit from PFM . . . some of the most profitable opportunities . . . may have higher initial demands on capital and skills than less profitable opportunities. . .").

89 Mahanty, S. and Guernier, J., supra note 80, at 11; see also RECOFTC, supra note 78, at 15.

90 Mahanty, S. and Guernier, J., supra note 80, at 11-12.

1.2.3 CFM: Increased community ownership, management and benefits, albeit risks

CFM has important advantages over JFM in communities' ability to own and manage their own forestlands. Most importantly in terms of REDD+, the degree of community rulemaking autonomy and sole ownership and management responsibility for forests in PFM has been found to be strongly correlated to positive forest conservation outcomes.[91] What is more, recent research shows that higher levels of community rulemaking and empowerment in CFM programs have a positive correlation with higher equity outputs as well as forest conservation.[92] Actual devolution of ownership of forest land and related benefits can prove less common in practice than the title suggests, however. For example, a 2008 survey of property rights associated with CFM in 14 Asian countries found that in every country except one, the state maintained ownership.[93]

Despite such challenges, some countries have been more progressive in devolving ownership, management, and benefits to community forestry operations in recent years , as the following examples testify:

- In Honduras, legal reform has devolved full forest management and production rights to communities for timber and NTFPs;[94]
- China now provides long-term state contracts of land to communities of 30-100 years, which have allowed for improved sustainable forest management;[95]
- Strong community forest enterprises in Mexico are based on a recognition of common property in the 1970s and ensuing support from legal reform, resulting in rural community ownership of 60-70 percent of forests;[96]

91 Hayes, T. and Persha, L., 2010. "Nesting local forestry initiatives: Revisiting community forest management in a REDD+ world." Forest Policy and Economics 12, 545–553, at 549; see also, Blomley and Iddi, 2009, at 31-32.

92 Persha, L., et al., 2011. "Social and Ecological Synergy: Local Rulemaking, Forest Livelihoods, and Biodiversity Conservation." Science 25 March 2011: Vol. 331 no. 6024, 1606-1608.

93 Mahanty, S. and Guernier, J., supra note 80, at 5.

94 See Milne, G., 2008. "Global Trends in Community Forestry and India's Potential." India Farm Forestry Advisory Program Launch Workshop, September 22-23, at 5

95 Id., at 5;

96 See Cronkleton, P. "Community Forest Management and REDD+ Lessons from Mexico, Brazil and Bolivia." Presentation from Forest governance, decentralization, and REDD+ in Latin America and the Caribbean workshop. September 3, 2010, Oaxaca, Mexico.

- New forest law in Brazil, aimed at addressing needed improvements in community forest rights, which could empower multiple communities combined under extractive reserve conservation areas (RESEX) now covering 12 million hectares of Amazon forest;[97] Additionally, recent Brazilian acceleration of demarcation and regularisation of indigenous lands has resulted in roughly 3.6 million hectares on 488 indigenous lands being classified as "Approved" for indigenous groups.[98]

- In Nepal, communities have been granted full ownership, management, and 100 percent of revenues from community forest, providing strong incentives for responsible forest management.[99]

When CFM does imply true ownership and management of CFM, however, potentially increased costs and risks to communities often come as well. This is compounded by the fact that villages often receive low quality forest lands needing work and capital investment, posing challenges for severely impoverished communities in particular. For example, communities in Asia typically have been allocated highly degraded forests under CFM programs, although a few countries in the region have begun to reverse this trend recently. A recent survey of three local forestry projects in Vietnam found the CFM-based project to present local participants with the greatest responsibility and potential benefits, but simultaneously the highest risks in case of forest fire or other disaster.[102] For CFM to function as a policy approach for REDD+ implementation, procedures will need to be developed to ensure risks are shared between local communities and governments (potentially with the help of other stakeholders).[103]

97 Id.

98 Fundação Nacional Indigena (FUNAI), "As Terras Indigenas: Situação atual," Government of Brazil (online article). URL: http://www.funai.gov.br/indios/terras/conteudo.htm#atual (Last checked 24 November 2010).

99 Mahanty, S. and Guernier, J., supra note 80, at 8.

100 Blomley, T. 2010. "Participatory Forest Management," in Beyond Borders: PES and REDD in the ASEAN Region. Ecosystem Marketplace, at 15-16. URL: http://forest-trends.org/~foresttr/documents/files/doc_2447.pdf (last checked 14 Nov 2010); See also, RECOFTC, supra note 78, at 9.

101 See, e.g. Mahanty, S. and Guernier, J., supra note 80, at 6.

102 Gesa, B., 2010. "Payment for Ecosystem Services in Vietnam: A Comparative Case Study in the Context of REDD+," (dissertation submitted to the School of International Development of the University of East Anglia), at 29 (the CFM project included a REDD+ component; the other two projects surveyed were a PES project focused on forest protection and reforestation project using conditional savings account as an incentive).

103 UN-REDD Vietnam report, supra note 30, at 8.

Key Points:

- Higher levels of community rulemaking and empowerment in CFM programs has a positive correlation with forest conservation and greater equity, but also imposes higher potential costs and risks to communities, compounded by highly degraded forests typically allocated them under CFM.
- To alleviate the risks associated with CFM, procedures will need to be developed to spread risks between local communities and governments.

1.2.4 JFM: State-retained ownership and community uncertainty

Many JFM programs have attempted to avoid the risk and difficulties of CFM by keeping forest lands under state ownership. However, state retention of ownership under JFM has often resulted in other difficulties for local community involvement, as without ownership or clearly outlined rights, villages receive little if any benefits and have less incentive to participate. Furthermore, without clear legal protection for community rights and benefits from their involvement in both CFM and JFM forest operations, agreements can be rescinded.[104] Several successful forest restoration initiatives in African and South East Asian countries in recent decades were suddenly lost due to rollbacks of JFM projects, driven by abrupt increases in timber prices.[105]

1.2.5 National PFM Policy Approach Example: Tanzania

Tanzania has a long standing tradition of national PFM, as it was one of the first African countries to attempt PFM in 1990-91 following unsuccessful traditional "command and control" forest management. Since then, PFM has grown rapidly to a total of roughly 12 percent of total forest area in Tanzania, including over 2,300 villages and 4 million hectares of forest.[106]

Tanzania enjoys an advanced PFM legislative framework, which encourages local forest management and ownership and provides a clear understanding of local forest managers' rights and responsibilities.[107]In addition, Tanzania has a highly decentralized national governance system enabling strong village governments.[108] Despite these strengths, the Tanzanian JFM system has been criticized for inadequate benefit sharing, which is deemed to threaten the system's long -term viability.[109]

104 See RECOFTC, supra note 78, at 9.

105 Blomley, T., 2010. "Participatory Forest Management," in Beyond Borders: PES and REDD in the ASEAN Region. Ecosystem Marketplace, at 16. URL: http://forest-trends.org/~foresttr/documents/files/doc_2447.pdf (last checked 14 Nov 2010).

106 Blomley, T. and Iddi, S., 2009. "Participatory Forest Management in Tanzania: 1993 – 2009; Lessons learned and experiences to date," Paper commissioned for Tanzania Forest and Beekeeping Division, at 5 (noting seven percent CFM and five percent JFM).

107 Id., at 15.

108 Id., at 14.

109 Id., at 41.

Key differences in Tanzania CFM and JM

JFM in Tanzania consists of collaborative management of state owned and controlled forests, where communities sign a Joint Management Agreement and then often de facto manage the forest but receive little to no benefits.[110] Forests allocated to JFM projects generally are rich in both carbon and biodiversity, but experience far less deforestation relative to other lands prior to their allocation.[111]

By contrast, Tanzanian CFM takes place on lands outside state ownership in forests on "village land,"[112] where, upon agreement to a management plan with district foresters, villagers assume full management and ownership responsibility, and land is registered as a Village Forest Reserve by the district council.[113] Under CFM, villagers may harvest forest timber and forest products, patrol and enforce forests, and collect royalties and other benefits from the forest.[114] CFM generally occurs on forests with lower carbon and biodiversity levels but relatively higher initial deforestation and degradation levels.

A variety of studies from over a decade on PFM in Tanzania have found CFM to be more effective than both JFM and traditional central state forest management in reducing forest disturbance and improving overall forest health in Tanzania.[115] In contrast, studies have found mixed results as to whether JFM shows slightly better forest protection over central state management or open access forest areas, [116] or no improvement at all.[117] Joint forest management in Tanzania has been strongly criticized by numerous studies because of

110 Id., at 12. (". . . the law remains silent on how the benefits of [joint] forest management – particularly in forest reserves managed for timber production purposes - can be equitably shared with participating communities. In many cases, benefit-sharing arrangements remain in a legal limbo – with de facto management at the local level taking place, in return for vague promises about benefits at a later date.")

111 Blomley, T., conversation by phone with author, 11 Nov 2010.

112 Land which has been surveyed and registered according to Tanzania Village Land Act of 1999 and managed by the village council.

113 Blomley, T. et al., 2009. "Exploring the rationale for benefit sharing in community forestry: Experiences from Tanzania and Nepal," in Towards a conceptual framework for equitable benefit-sharing in community forestry, 12 pp., at 2.

114 Id., at 2 (noting villagers are held exempt from regulations against harvesting reserved tree species and are not forced to share royalties with government).

115 Blomley, T. and Iddi, S., supra note 111, at 31. See also, Persha, L. and Blomley T. 2009, "Management Decentralization and Montane Forest Conditions in Tanzania," Conservation Biology, 23(6), 1485-1496, at 1493. (". . . [T]he communal-management strategy showed stronger institutional effectiveness, reduced recent illegal logging, and better conservation of forest integrity than either state-sponsored strategy.")

116 Blomley, T. et al. 2008. "Seeing the wood for the trees: an assessment of the impact of participatory forest management on forest condition in Tanzania," Fauna & Flora International, Oryx, 42(3), 380–391 at 389-390.

117 Persha, L. and Blomley T., supra note 120, at 1493.

its failure to deliver tangible benefits to forest dependent communities and its inherent inequity in distribution of forest management costs and benefits between the state and forest users.[118]

PFM in Tanzania REDD+ planning

Since its REDD+ planning began in 2008, Tanzania has established an interministerial REDD task force, a National REDD Framework document and a National REDD Strategy and Action Plan. To date, seven REDD+ pilot projects have been begun in various parts of the country. Based on its experience with PFM, the Tanzania REDD Readiness Preparation Proposal (R-PP) of October 2010 states that PFM will be the cornerstone of the national REDD+ program.[119]

Elite capture poses a significant challenge to PFM in Tanzania, especially with regard to CFM.[120] Studies to date suggest that unless CFM deliberately targets poorer community members, they likely could receive insignificant benefits from forest management efforts, and could even be negatively affected as a result of REDD+ and PFM forest activities.[121] Given that local communities have received few benefits from the state for PFM initiatives to date, in contrast to positive benefit sharing experiences with private contracts between villages and tourism companies, Tanzanian forest management groups have advocated that the national REDD+ model provide for 'direct incentives' to local forest managers.[122] However, the Tanzanian government and some researchers have advocated for an independent national REDD Trust Fund to receive international funds and distribute to local communities and implementers domestically.[123]

1.2.6 National PFM Policy Approach Example: Vietnam

In addition to relatively advanced REDD+ national planning and a range of REDD+ pilot initiatives underway in various provinces,[124] Vietnam has state managed PES and CFM programs to draw on in helping

118 Blomley, T. and Ramadhani, H., 2006. "Going to scale with Participatory Forest Management: early lessons from Tanzania." International Forestry Review, 8, 93–100. see also Lund, J.F. and Nielsen, Ø.J., 2006. "The promises of Participatory Forest Management in forest conservation and poverty alleviation: the case of Tanzania." In L'Afrique Orientale. Annuaire, 2005. (eds. H. Charton & C. Médard), pp. 201–241. L'Harmattan, Paris, France. see also Meshack, C.K. et al., 2006. Transaction costs of community-based forest management: empirical evidence from Tanzania. African Journal of Ecology, 44, 468–477; see also Pfliegner, K. & Moshi, E., 2007. "Is Joint Forest Management viable in protection forest reserves? Experiences from Morogoro Region." The Arc Journal, 21, 17–20.

119 United Republic of Tanzania, 12 Oct 2010. "Tanzania Readiness Preparation Proposal (R-PP)," The World Bank Forest Carbon Partnership Facility (FCPF). ("Tanzania has benefited from many years of implementing PFM programmes which have helped to integrate communities into forest management and thus address some of the policy and critical forest governance issues concerning with deforestation and forest degradation. This experience provides a value basis for rapid REDD readiness.").

120 Blomley, T. and Iddi, S., supra note 111, at 39.

121 Id., at 41.

122 See Tanzanian Forest Working Group, 2010. "Options for REDD in Tanzania: Key Design Issues for the National REDD Strategy" at 8. URL: http://www.tnrf.org/files/E_INFO_TZ_REDD Brief 2010.pdf (citing a lack of JFM revenue-sharing guidelines from the Ministry of National Resources and Tourism after a decade of implementation and similar lack of revenue-sharing in Wildlife Management Areas).

123 United Republic of Tanzania, Aug 2009. "National Framework for Reduced Emissions and Forest Degradation (REDD)," at 10. See also, Vatn, A. et al., "The REDD Direction - The potential for reduced forest carbon emissions, biodiversity protection and enhanced development. A desk study with special focus on Tanzania and Uganda," Noragric Report No. 51, Department of International Environment and Development Studies, Noragric, Norwegian University of Life Sciences, at 60-61.

124 Vietnam released its draft Readiness Preparation Plan in August 2010 and has begun a variety of REDD pilot initiatives in various provinces. See Lang, Chris, (7 Sep 2010), redd-monitor.org, "REDD in the Mekong Region" URL: http://www.redd-monitor.org/2010/09/07/redd-in-the-mekong-region/#vietnam

inform development of its REDD+ benefit sharing system.[125] A comprehensive 2010 study of Vietnam REDD+ national benefit-sharing capacity found the country to have an adequate legal framework and administrative structure in place to allow for effective community based REDD+, although recognizing the need to increase legal recognition and rights of communities in forest management activities.[126] The history of distribution of benefits at local level and local participation in CFM suggests important lessons for benefit sharing under Vietnamese REDD+.

CFM in Vietnam: Strong foundation despite need for greater local participation and empowerment

Since the late 1980's to the early 1990's, the Vietnamese government has encouraged a dramatic process of decentralization of forests and forestlands by allocating land to households, groups of households and communities for conservation and management, including CFM.[127] More recently, passages in the 2003 Land Law and the 2004 Forest Protection and Development Law further support community forest management, in particular by recognizing the legal status of communities as land resource owners and recognizing common property as a legal form of forest management.[128] Unfortunately, decentralization of forest management in Vietnam has not proven profitable for many poor households, especially given their endemic labour and capital shortages.[129] Recent surveys find there has been great progress on local community involvement in forest protection but limited community participation in forest management.[130] A lack of official recognition of communities as legal entities under the 2005 Civil Code of Vietnam poses a major stumbling block to both community forest profitability and management, effectively barring community participation as parties in contracts or other civil legal agreements, and as a result, from receiving forest management benefits via civil contracts.[131]

Although surveys estimate households and communities de facto manage far more forest than official statistics suggest, the country has yet to move beyond CFM pilot projects to embrace wider scale national implementation.[132] Additionally, room for improvement has been noted in a generally inflexible, top-down approach to design and implementation of the administrative and methodological regulations prescribed to villages under official CFM schemes. A 2008 survey of 11 villages in two provinces participating in CFM found official CFM villages generally weaker in implementation and local respect than traditional CFM villages where communities developed their own regulations for forest manage-

125 In addition, the following other forest conservation-related initiatives are underway in Vietnam: reforestation (including CDM and voluntary carbon market projects), an international donor-supported Trust Fund for Forests, and negotiations towards a Voluntary Partnership Agreement with the EU under its Forest Law Enforcement Governance and Trade (FLEGT) program for legal timber verification.

126 UN-REDD Vietnam Programme, 2010. "Follow-up studies for the design of a REDD-compliant Benefit Distribution System in Viet Nam," (hereafter "UN-REDD Follow-up Studies"). 62 pp., at 6.

127 Vien, Tran Duc, and Quang, Nguyen Vinh. "Decentralization in Forest Management and in Three Communities in Vietnam's Uplands." Center for Agricultural Research and Ecological Studies (CARES), Hanoi Agricultural University, 26 pp., at 2. See also, Tuan, Hoang Huy. 2006. Decentralization and Local Politics of Forest Management in Vietnam: A Case Study of Co'Tu Ethnic Community, Journal of Legal Pluralism, Nr. 52, 169-206, at 169. URL: http://www.jlp.bham.ac.uk/volumes/52/hoanghuytuan-art.pdf. See also, Id., 9.

128 Forest Protection and Development Law, December 2004, Government of Vietnam. See Nguyen, Q.T., et al., 2008. Community Forest Management for Whom? Learning from Field Experience in Vietnam, at 188-189. URL: http://pubs.iied.org/pdfs/G02243.pdf.

129 Id. at 33.

130 UN-REDD Follow-up Studies, supra note 131, at 19.

131 Minh Ha, Hoang, et al., 2008. Payment for environmental services: Experiences and lessons in Vietnam. Hanoi: World Agroforestry Centre (ICRAF). (noting although Art. 220 allows for community ownership of common assets, Art. 84 stipulates four conditions necessary for entities to enter into civil legal relationships, of which communities do not meet entirely). URL: http://www.worldagroforestrycentre.org/sea/Publications/files/booklet/BL0034-08.PDF

132 Burchards, G., 2010. "Payment for Ecosystem Services in Vietnam: A Comparative Case Study in the Context of REDD+," Master's Dissertation, University of East Anglia, 41 pp., at 20.

ment and benefit sharing.[133]

In the interim, the GOV has developed some ad hoc work around solutions for devolving land management despite the lack of legal recognition for village communities under existing civil codes. However, for effective CFM in the long-term, legislative and regulatory frameworks will likely need to provide communities with legal rights to protect and manage forests, participation in official CFM rulemaking, and legal recognition to allow them entry into economic transactions.[134]

1.3. Forest Concession Management Approach

1.3.1 Concessions as Default Model

Where countries do not develop new, or modify existing, legal and policy frameworks to provide for benefit sharing from forest carbon sequestration or REDD+ specifically, existing law for commercial forestry management may apply either as an interim "default" or final benefit-sharing framework for REDD+ projects. Regulations for exploitation of natural resources generally provide for leasing of forest resources (in forest "concessions" or other similar units) via contractual arrangements, which often follow a state managed competitive allocation process to commercial interests.[135] In the case of REDD+, such concession contracts could be set up to provide for forest conservation set asides or sustainable forest management complementary with the goals of REDD+, such as RIL.

Although a wide variety of specific procedures exist across different national forestry systems, logging concession agreements typically provide that economic and secondary financial benefits stemming from such exploitation of forest resources are subject to royalties or other fees to the state, which then decides how to disburse such revenues among national, provincial, and district level government, as well as potentially to local and indigenous community populations.[136] In recent years, forest legislative reforms in several countries have been enacted to require compensation of effected forest communities and to recognize their rights to forest resources. In Ghana and Liberia, for example, forest concession regulations mandate concession lessors negotiate social agreements with communities impacted by forest concessions and further require the state to transfer concession income to local governments.[137] In some countries, community forest concessions function in a variation on PFM, whereby communities may potentially use forest resources for commercial purposes.[138]

1.3.2 Potential Concerns with Forest Concession Approach

With respect to its consideration as a REDD+ benefit sharing policy approach, the choice of which government level makes the specific details of benefit sharing arrangements is critical in forest concession revenue sharing. Often, the determination of the relative share of proceeds from forest revenues is made uniformly at the national level according to forest estate types, rather than at a provincial or lo-

133 Nguyen, Q.T., et al., supra note 133, at 1-2.

134 UN-REDD Follow-up Studies, supra note 131, at 20-21.

135 See Christy, L. et al., supra note 81, at 48-49.

136 See Id., at 137-139 (noting a variety of methods for estimating and collecting fees on exploited forest resources).

137 Behr, D.C., et al, 2009. Rethinking Forest Partnerships and Benefit Sharing: Insights on Factors and Contexts that Make Collaborative Arrangements Work For Communities and Landowners. The World Bank, at xiv.

138 Id.

cal level. Although local variations in carbon sequestration values, opportunity, and transaction costs may not be important issues for conventional forest management, such considerations are extremely relevant to achieving the goals of a given country's REDD+ program. The example of Indonesia below shows the potential difficulties in a uniform benefit sharing arrangement from a national level.

Additionally, as the Cameroon case below demonstrates, commercial forest concessions in tropical forest countries can result in inequitable results for forest dependent communities living near commercially logged areas. Historically, the lack of involvement of local communities and indigenous people in management of and decision making related to forest concessions has posed a major challenge to equitable revenue sharing. In many countries, concession areas may be determined and logging permits issued incorrectly, such as without proper FPIC of indigenous peoples or other local communities living within or nearby the concession areas. Government officials often team up with logging companies to prepare concession areas and assign them to the company, and in the process may engage with influential members of local communities and indigenous peoples to get consent on paper from the communities involved. If local communities and indigenous peoples are organised to have their interests represented, there may nonetheless be governance and benefit sharing problems with these representative organisations, which in the past have lead to socioeconomic problems for communities in and near concession areas.[139] Taken together, the above could lead to serious problems with REDD+ non-compliance during the concession permit period and potentially more so once a permit expires. Variation in the expiry dates of concessions could create further complications in securing REDD+ commitments for similar terms among concessions and in equitable payment allocations. If existing concession systems are used for REDD+ benefit sharing, they will first need to be closely and critically reviewed, with identification of potential problems of the chosen benefit sharing regime and necessary changes for their mitigation.

Key Points:

- Where there is not an adequate legal or policy framework to accommodate REDD+ mechanisms, revenues from the conservation of leased forest concessions can be shared with different levels of government and local and indigenous communities.
- Concession benefits have often been shared inequitably among those affected by logging.
- Before an existing concession system is used as REDD+ benefit sharing model, it will need to be critically reviewed and, where necessary, revised to ensure equitable outcomes, learning from the many lessons available.
- Where determination of the relative share of proceeds is made uniformly at a national level instead of by local and provincial governments, important differences may be overlooked in local opportunity and transaction costs, potentially disfavouring local community participation.

139 See generally, e.g.,Soreide, T., 2007. "Forest Concessions and Corruption," Anti-Corruption Resource Centre, Chr. Michelsen Institute, U4 ISSUE 3:2007, 24 pp. URL: http://www.cmi.no/publications/file/2818-forest-concessions-and-corruption.pdf; see also, Edmunds, D. and Wollenberg, E. 2001. "Historical Perspectives on Forest Policy Change in Asia: An Introduction," Environmental History Issue 6.2 , 190-212, at 192-193, URL: http://www.environmentalhistory.net/articles/6-2_Edmunds.pdf.

1.3.3 National Forest Concession Policy Approach Example: Cameroon

Having submitted a Readiness Plan Idea Note (R-PIN) but not yet finalized a REDD+ benefit sharing framework at the time of writing, Cameroon provides an example of a country considering existing "default" provisions for benefit sharing, based on procedures for distributing revenues from logging concessions.[140] To date, Cameroon generally has been lauded for its sustainable forest management policy and its progressive efforts to decentralize forest revenue disbursement to local communities.[141] The 1994 Forestry Law provides that revenues collected by the government from a tax on industrial exploitation of forest concessions (FMUs) are to be distributed as follows: 50 percent to the State, 40 percent to rural councils (local authorities in Cameroon), and 10 percent to villages living next to forest concessions, as well as payment of a village tax to communities near forest concessions.[142] The terms of benefit sharing in Cameroon are negotiated centrally by the Finance and Forestry Ministries without local community input, and the percentage paid to local communities is designated in the 1996 Finance Law.[143] In addition to these revenues, the 1994 Forestry Law states project entities are to carry out development projects and public works such as construction of schools, roads, and hospitals, to be supervised by local forestry agency officials.

Unfortunately, all has not gone according to plan for Cameroon forest villages. In 1998, a joint ministerial administrative decision recentralized allocation of local government management to regional levels, including revenues due villages.[144] Since that time, villages bordering forest concessions have reported a pervasive lack of tax revenues allocated from the state.[145] In addition to missing proceeds due from government,

140 Republic of Cameroon, Readiness Plan Idea Note (R-PIN), The Forest Carbon Partnership Facility (FCPF), Date of submission: 31 July, 2008.

141 Carret, J. C., 2000. "La réforme de la fiscalité forestière au Cameroun.Bois et Forets des Tropiques." No. 264 (2).

142 See Morrison, K. et al., 2009. "Broken Promises: Forest Revenue-Sharing in Cameroon," World Resources Institute Forest Note, at 5.

143 Nchunu, J., 2009. "Case Study: Cameroon," in Legal Frameworks for REDD, supra note 54, at 146. (noting local communities have no consultation process in the amounts to be paid them, and are only notified of the amount of their payment at a briefing prior to exploitation of the forest concession).

144 Cotula, L. and Mayers, J., 2009. Tenure in REDD: Start-point or afterthought? Natural Resource Issues No.15. London, UK: International Institute for Environment and Development (IIED).

145 Egbe, S.E., 2001. "The concept of community forestry under Cameroonian Law". Journal of African Law 45:25–50; See also CIFOR, "Distribution of Timber Fees to Communities in Cameroon Compromised by Confusion and Corruption: Providing Lessons for Global Efforts to develop equitable distribution of REDD+ revenues," Press Release, (19 Nov 2010).

villages face challenges in horizontal distribution of benefits, as the 10 percent distribution of revenues to neighbouring communities is received by chiefs in the name of their villages. In the process, many villagers fail to benefit from the forest revenues received.[146] A 2009 study of the Cameroonian forest revenue sharing system recommended mechanisms to ensure transparency, monitoring, accountability, management capacity and effective participation and representation in order to rectify the problem of benefits missing at the local level.[147] Additionally, both incentives for responsible management and punitive consequences for mismanagement of forests were found essential for these mechanisms to succeed.[148]

1.3.4 National Forest Concession Policy Approach Example: Indonesia

Like Cameroon, Indonesia presents an example of a REDD+ implementing country that may follow the traditional forestry concession model of distributing benefits. Draft REDD+ regulations for benefit sharing (released in May 2009 by the Ministry of Forestry but under internal discussion at the time of writing) outline a proposed plan to follow a benefit sharing approach based on central government apportionment of revenues.[149] The 2009 proposed regulations would apply to sales by carbon developers of income from carbon credits according to a set of uniform percentage-based splits between government, developers, and local communities. Eleven percentage split scenarios are listed in the regulation for distributing revenues depending on forest type license and the project developer entity, although in most cases communities and government each would receive 20 percent and project developers 60 percent. The government share would be further divided 40 percent central government and 20 percent to both provincial and district governments.[150] It should be reiterated, however, that this proposal is still under discussion within the Indonesian Government and the outcome uncertain at the time of writing.

A potential difficulty with a uniform forest concession revenue sharing arrangement such as that considered in Indonesia, lies in the fact that economic theory suggests various sub-national regions would have different opportunity costs for avoided deforestation based on such factors as distance to markets, local forest land carbon content, micro-climates, and land quality. This theoretical problem is only magnified in Indonesia due to its highly diverse geography spanning an island chain. In fact, a 2009 economic analysis found avoided deforestation opportunity costs in Indonesia to differ dramatically according to competing land uses, locales, scales of production, and wide fluctuations in carbon content estimates, as demonstrated in Figure 1.3.1 below.[151]

146 Mbile, P. and Okan, D., 2009. Achieving customary-statutory rights compromise in Cameroon's Forest & Wildlife Policies: Extending forest benefits sharing to communities living in wildlife protection zones and to indigenous groups in Cameroon. World Agroforestry Centre, at 2-3, (online article) URL: www.worldagroforestry.org/downloads/publications/PDFs/BR09040.PDF (last checked 23 Nov 2010).

147 Nchunu, supra note 148, at 146-47.

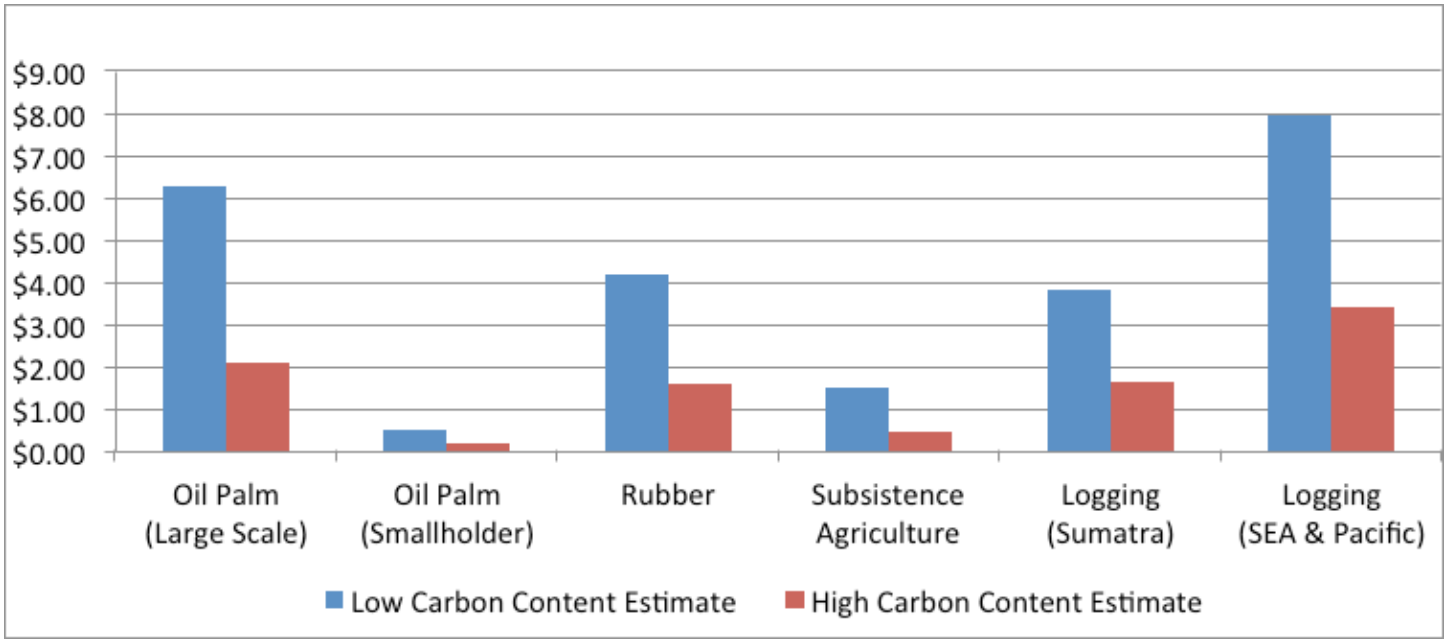
148 Morrison, K. et al., supra note 147, at 11-13.

149 Ministry of Forestry, 2009. "Regulation Regarding Procedures for Licensing of Commercial Utilisation of Carbon Sequestration and/or Storage in Production and Protected Forests," (P.36/Menhut-II/2009).

150 Id.

151 Olsen, N. and Bishop, J. 2009. The Financial Costs of REDD: Evidence from Brazil and Indonesia. Gland, Switzerland: IUCN. 64 pp, at 42.

Figure 1.3.1: Opportunity cost estimates in Indonesia by land use alternative



Source: Olsen, N. and Bishop, J., 2009.

However, in November 2009 the Indonesian Ministry of Finance released a "Green Paper" on options for climate mitigation finance, which includes a preliminary discussion of using a "Regional Incentive Mechanism" for distributing benefits from the central government to regional governments based on REDD+ performance as well as other locally based climate mitigation and adaptation measures.[152] This proposal would then give regional governments the role of "full control over the design and implementation of projects, while the central government would choose the most cost-effective proposals for implementation, taking into account development priorities, possibly by way of a tendering system."[153] The Green Paper further suggests options for channelling REDD+ financing, either via existing national funds or via a system of direct grant agreements. If this latter option were taken, Indonesia's approach could take the form of an intergovernmental transfer mechanism (as discussed in the chapter on PES) and have the added advantage of allowing for sub-national tailoring of government payments and/or percentage based revenue sharing from carbon credit sales according to differing local opportunity costs. This approach reportedly remains under consideration by the Government of Indonesia as a potential REDD+ benefit sharing model at the time of writing (although no mention is made of what benefit sharing policy approach(es) would serve as a basis for the REDD+ regime).

In the last decade, Indonesia has undertaken a series of progressive reforms to its forestry sector to rehabilitate its Reforestation Fund (Dana Reboisasi, or DR) instituted under the Soeharto regime. The DR fund, financed from a fee charged on timber concessionaires, was intended to pay for reforestation and rehabilitation of forestlands. The DR totalled an impressive 5.8 billion USD over its 20 year history, but little of that money actually reached reforestation projects. Instead, elite interests and projects in con-

152 Indonesia Ministry of Finance, supra note 45, at 12.

153 Id. at 12. See also, Ring, I. et al., 2010. "Biodiversity conservation and climate mitigation: what role can economic instruments play?" Current Opinion in Environmental Sustainability 2010, 2:50–58, at 55-56.

flict with the DR's mandate (e.g., traditional logging plantations) captured a large portion of DR funds. DR projects generally benefited powerful forestry companies while local communities were often displaced, without compensation, from their customary lands. When developing a national REDD+ system, Indonesia and many other REDD+ implementing countries, will need to ensure transparent accountability for income received and equitable benefit distribution. The DR experience especially emphasizes the need for safeguards regulating private developers, given that many of the same forestry, oil palm, and paper producers are now in a position to develop REDD+ projects in Indonesia.[154] In particular, it seems critical that in order to gain public trust, safeguards will need to provide independent multi-stakeholder governed institutions to implement REDD+ schemes and manage funds.

2. COMPARISON OF POLICY APPROACHES

2.1 Architectural Analysis of Policy Approaches

2.1.1 Sustainability

A national PES-based policy approach for REDD+ benefit sharing, as exemplified in many Latin American countries in particular, most likely provides the greatest domestic sustainability of the three policies examined here. As discussed above, many Latin American governments are building self-funded national systems for environmental services already, which should help them regardless of if and how REDD+ is ever adopted as an internationally funded program under the UNFCCC. Developing all or partly self-financed PES/REDD+ systems at a national or regional level is an important step that all countries would do well to consider implementing, to the extent possible, given the increased ability to cover opportunity costs if REDD+ is delayed in implementation or international funds are not enough alone.

At least in the short term, domestically financed PES/REDD+ systems may be better suited for advanced developing economies, as lesser developed countries may be reluctant to impede domestic economic growth and foreign investment via domestic taxes on high carbon or water use sectors. Additionally, outside support could be necessary for lesser developed countries to implement the required satellite monitoring and develop necessary financial mechanisms to begin to ensure payments reach intended recipients in local and indigenous communities. However, if properly designed and implemented, REDD+ could provide both the necessary increased capacity and institutional infrastructure for many lesser developed countries to develop their own autonomously financed PES systems to complement REDD+ international funding or carbon credit sales.

2.1.2 Efficiency

From a short term perspective at least, the forest concession revenue sharing approach might offer the most efficiency and clarity of the three policy choices, especially in cases where large tracts of forest land owned outright without conflicting title or customary ownership claims (or other potential for infring-

154 See generally, Barr, C., 2010. "Financial Governance and Indonesia's Reforestation Fund during the Soeharto and post-Soeharto Periods, 1989–2009," Center for International Forestry Research (CIFOR), Bogor, Indonesia.

ing on relevant stakeholders) could be easily managed and benefits shared with few intermediaries. Under this scenario, governments would not be faced with assessing land tenure claims of thousands of small landholders, enabling REDD+ activities to begin quickly. However, such initial "scaling-up" efficiencies of forest concessions could be offset by longer term disadvantages of effectiveness and equity (especially in situations where concessions effect long term ecosystem resilience or local communities) unless revenue sharing determinations are devolved to a provincial level and safeguards incorporated to ensure local community receipt of benefits. Finding a balance between the 'three e' objectives among forest concessions would likely involve discriminating between pre-existing concessions without potential impacts to local communities or biodiversity, and existing concessions or new proposals likely to pose such impacts.

Due to the highly local nature of attempting to register individual landowners piecemeal and consequent high transaction costs thereof (on top of potential land tenure complexities), it seems likely that the PES and PFM approaches discussed could face greater difficulties in scaling up quickly. Bundling landholders in group contracts and simplifying both verification and national recognition of customary or informal land title could help address such PES and PFM challenges. As noted in the chapter on PFM, given the likely inability of REDD+ payments in a strict avoided deforestation sense to meet forest dependent communities' opportunity costs in CFM programs in particular, it will be important to balance other forms of carbon sequestration benefits (i.e., under the "plus" side of REDD+) with potential revenues from sustainable forest management.

2.1.3 Equity

Provided that land tenure is not an issue in large forest concessions, transaction costs could be kept minimal and huge amounts of carbon could be sequestered efficiently. However, without mechanisms to ensure inclusion of poor landholders, the concession model would inequitably favour large commercial concessionaires such as logging, soy, and palm oil corporations soaking up most REDD+ benefits. Namely, unless poor and marginalized landholder groups were prioritized for receipt of benefits (such as under the Mexican PSAH described briefly in the PES chapter), nationally uniform approaches (whether PES, PFM, or logging concessions) could also be less equitable, due to an inability to target poorer landholders.

2.1.4 Effectiveness

Among the three approaches considered, perhaps what is most clear is the nationally uniform revenue sharing approach would likely suffer in effectiveness due to potential over and underpayments of participants, given potential differences in opportunity costs (and to a lesser extent, differences in transaction and implementation costs). This could be solved by devolving the decision of percentage payments to a provincial level and including district level quantitative and qualitative data concerning amounts and distribution of revenues (which would also enhance local and indigenous communities' perceptions of program fairness). Additionally, within the PFM approach, CFM (and similar initiatives that devolve forest ownership, management responsibilities and benefits to local and indigenous communities) in most instances would be a highly preferred option to JFM.

2.1.5 Linkages with Land/Carbon Ownership and Control

Judging from experiences to date, the three policy approaches would likely be associated with different land and carbon ownership regimes under REDD+. First, the PES approach has been conceptualized largely as payments to landholders for conservation of their own land holdings and thus would work best with a tenure regime allowing for private ownership and control of land and carbon. Within that generality of private ownership, however, exceptions would exist for programs such as intergovernmental fiscal transfers made to local governments to maintain or enhance carbon stock on state-owned land. Conversely, forest concessions are based more often on a model of state-ownership and control of land and carbon, with leases of a fixed number of years providing for those rights only to be temporarily profited from by lessees. (Of course, a given jurisdiction could adopt both concession and PES approaches and apply state- and private-ownership regimes respectively in each case.) Finally, the PFM approach can be seen as incorporating instances of both property regimes; JFM retains land and likely also carbon ownership with the state, whereas CFM generally devolves ownership and control of land to communities, and thus carbon most likely as well.

Key Points:

- PES and PFM approaches could provide the best opportunities for sustainability, equity, and effectiveness, although concessions may offer efficiency advantages at least in the short term.
- Uniform national implementation of PES and forest concession revenue sharing currently provide the best opportunities for sustainability and efficiency, respectively, but risk sacrificing equity and effectiveness.
- All three approaches would be enhanced by devolving certain decision-making and management elements to local and provincial levels, as well as prioritizing poor and marginalized groups.
- Each of the three approaches would work best with different land and carbon ownership regimes under REDD+.

2.2 Benefit Sharing Regional Approaches to Address Deforestation Drivers

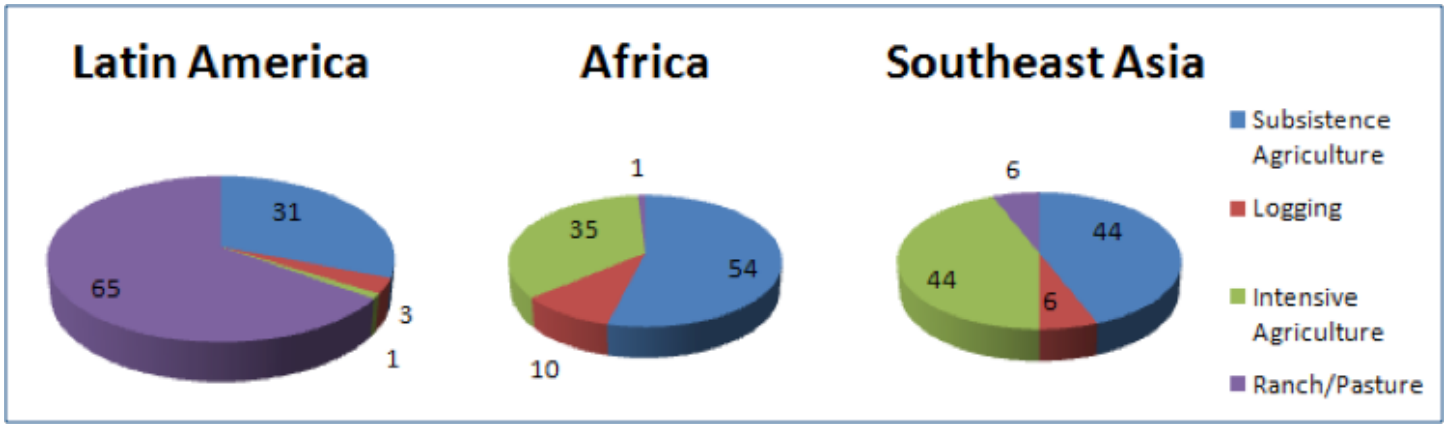
Deforestation occurs in complex, regional context- and temporal-specific patterns depending on both endogenous and exogenous factors such as markets, government policies, and biophysical events, with larger drivers such as globalization generally underlying such proximate drivers.[155] Land use change

155 Geist and Lambin, 2001. "The causes of land-use and land-cover change: moving beyond the myths," Global Environmental Change 11, 261–269, at 266.

drivers often differ dramatically from country to country and over time within a region. What is more, positive feedback loops will further accelerate land use change and forest loss due to increased natural hazards, drought, and climate events, complicating regional deforestation driver predictions based on historic data.[156] As such, regional data are overly broad methods at best of estimating overall deforestation drivers, and caution should be taken in applying generalizations based on composite regional figures to specific local contexts.

With those general caveats in mind, this section of the paper assesses REDD+ benefit distribution strategies for Latin America, Africa, and Asia based on 2008 estimates of aggregate regional deforestation drivers, as summarized in Figure 2.2.1 below. In general, PES has had its greatest influence in Latin America, although it has been gaining momentum globally (especially in parts of Asia). Many countries in Africa and Asia have decades of experience with PFM, although both also have long experience from traditional commercial forestry concessions as well. However, as noted throughout this paper, the benefit- haring policy approaches discussed above are used already to a varying extent in most tropical forest countries today.

Figure 2.2.1 Comparison of Deforestation Drivers by Region



2.2.1 Latin America

Ranching and pasture conversion represent the dominant (65 percent) driver of deforestation in Latin America, with subsistence agriculture in second place (31 percent).[157] At less than five percent combined, logging and intensive agriculture represent relatively minor drivers according to these general findings.

This would suggest that the largely PES-based policy schemes of Latin America will need to target adequate REDD+ benefits to prevent cattle ranchers operating from outside forests from entering and clearing forest for pasture. At the same time, REDD+ benefits will also need to remain "pro-poor" and

156 Brink, A. and Eva, H., 2009. "Monitoring 25 years of land cover change dynamics in Africa: A sample based remote sensing approach," Applied Geography 29 501–512, at 511.

157 Project Catalyst, 2009. "Towards the inclusion of forest-based mitigation in a global climate agreement." The ClimateWorks Foundation, (May 2009 Working Draft), at 12.

offset opportunity costs of internal forest dependent local and indigenous communities looking to expand their subsistence agriculture croplands. Even such a cursory analysis recommends that in order to tackle both ranchers and forest dwellers, REDD+ will depend on fundamental changes to policy and legal frameworks, such as removing so-called "perverse incentives" running contrary to the aims of REDD+.[158] In particular, subsidies promoting conversion of forest to pasture land and property and tax laws enticing frontier colonization will need to be eliminated in order for Latin American REDD+ benefits to operate free from opposing national policies.

2.2.2 Africa

Deforestation in Africa is driven primarily by subsistence agriculture (54 percent) and intensive agriculture (35 percent). Commercial logging has the greatest impact in Africa of the three regions (10 percent), and ranching and pasture land conversion accounts for only one percent.[159] Insecure property rights generally compound population pressures and agricultural expansion in Africa.[160] Benefit distribution via PFM and/or PES approaches combined with land tenure reform would seem best placed to address local and indigenous communities clearing land, provided vertical and horizontal allocation mechanisms are equitable and efficient. Some benefits would also need to reach larger commercial agriculture and logging interests, which might be done efficiently by allocating a portion of payments via provincial level institutions in long-term forest concessions, provided improved allocation mechanisms and safeguards to protect local and indigenous communities' tenure and forest use rights. Finally, Africa's dramatic loss of natural ecosystem landscapes in recent decades means there will be overwhelming pressure on the continent's last remaining protected areas, which will also require adequate financing and strategic interventions (either from REDD+ or other funds).[161]

As in Latin America, however, payments to landholders alone will not be adequate to curb deforestation in tropical forest rich countries of Central Africa. There, natural resource governance in many countries has proven largely inadequate to tackling destructive patterns of forest degradation and subsistence slash and burn farming.[162] Without significant improvements in the fundamental design and implementation of forest management regulations, it is hard to see that REDD+ can lead to sustainable reductions in deforestation and forest degradation in Africa. What is more, total estimated deforestation emissions from Latin America and Asia each more than double those of Africa, with Brazil and Indonesia accounting for most of their respective regional emissions.[163] Thus, from the perspective of a rational global investor or donor, Africa will need to double its forest governance efforts in order to compete for REDD+ finance and to maximize impacts from the finance it does receive.

158 See, e.g., Geist and Lambin, supra note 161, at 263. (noting deforestation patterns in Latin America, especially Amazonia, prompted by market conditions and state policies).

159 Project Catalyst, supra note 163, at 12.

160 Olsen, N. and Bishop, supra note 157, at 6.

161 Brink, A. and Eva, H., 2009. "Monitoring 25 years of land cover change dynamics in Africa: A sample based remote sensing approach," Applied Geography 29, 501–512, at 510-511 (noting population increases, globalization and economic development as underlying deforestation pressures of African land use change, largely from natural to agricultural landscapes).

162 Geist and Lambin, supra note 161, at 263.

163 Project Catalyst, supra note 163, at 12.

2.2.3 Asia

In Asia, intensive and subsistence agriculture each account for 44 percent of deforestation, and logging and ranching/pasture conversion drive six percent each.[164] Asian tropical deforestation is similar to that found in Africa in some respects, as industrial logging concessions lacking strong enforcement often open up the way for new settlers and subsistence forest clearing. However, Asian states also actively promote large forest development and intensive agriculture projects, which can introduce migrant workers and disrupt local communities and indigenous settlements, contributing to further land use change.[165]

Although to date often inequitable, PFM programs in some Asian countries have accounted for dramatic forest recoveries, and could provide promising options for delivering REDD+ if ownership rights are devolved and benefit sharing improvements are made.[166] As noted earlier regarding PFM (and CFM in particular), sustainable forest management practices could provide profitable, sustainable opportunities for both commercial enterprises and local and indigenous PFM participants if combined with carbon financing. To make that possible in a PFM context, however, sufficient revenues would need to be spent on local capacity-building in techniques such as reduced impact logging as well as on overhauling forest governance and benefit-sharing arrangements. Additionally, Asian countries will need to focus REDD+ financing both on revising national policy incentives and legal frameworks promoting agriculture-related deforestation as well as prioritized payments among subsistence and intensive farmers to promote forest conservation and carbon sequestration practices.

Key Points:

- REDD+ benefit sharing distribution strategies differ between geographic regions based on the relevant drivers of deforestation.
- Latin America would benefit most from the removal of key perverse incentives and by providing incentives against deforestation from both within and outside of existing forests.
- Africa would seem to have the lowest project benefit outcome from REDD+, but due to a prevalence of insecure property rights there, those incentives that would be useful focus on land-tenure reform through PES and PFM.
- PFM approaches have shown promise in Asia, and if combined with carbon financing, could provide benefits for both local communities and commercial enterprises.

164 Id.

165 Geist and Lambin, supra note 161, at 263.

166 Rudel, T.K. et al., 2005. "Forest transitions: towards a global understanding of land use change." Global Environmental Change 15, 23–31, at 27-28 (noting Bangladesh, China and India PFM afforestation programs).

3. COMMON CHALLENGES AND LESSONS LEARNED

REDD+ will bring many costs as well as benefits, both of which governments will need to decide how best to distribute, both up-front and over the long-term. In the early years of implementation for many countries, these costs will include improved forest and financial governance, increased capacity for monitoring and verification of activities, and land tenure reform. Even if REDD+ develops to its fullest potential phase of market financing and/or public funding under a deep international emissions cap, carbon finance likely will be inadequate to cover all costs plus a premium for every actor potentially involved in each country. Therefore, governments implementing REDD+ programs would be benefited by working to identify and prioritize recipients in light of their overall national sustainable development strategies. REDD+ programs and measures have the potential to restock and preserve countries' forested areas and sustainably alleviate poverty, as well as provide important carbon sequestration services to the world.

3.1 Design of cost/benefit sharing schemes

As outlined in this paper, under any REDD+ benefit sharing policy approach chosen, governments will need to inform their payment schemes with locally specific opportunity and transaction cost considerations (as well as include extra initial benefits for a transition to alternative activities). However, a 2009 survey of PES projects shows that projects often fail to assess participants' opportunity or transaction costs. What is more, opportunity costs are dynamic by nature, and payments to participants can maximize equity and efficiency where such cost changes are addressed in contract or regulation conditions.[168] Given these considerations, it seems critical that implementing governments have the capacity and tools to determine opportunity costs in local communities and to design and implement effective contract mechanisms that can flexibly respond to changes in those costs.

Experience to date also shows a need for consultation with communities on payment design (e.g., whether individuals or communities receive benefits, and whether cash or in-kind benefits). If acceptable to local and indigenous communities, government in-kind benefits could prove attractive to both parties, given the wide array of policy options allowing for low state costs (e.g., loans, debt swaps, tax relief, employment opportunities, NTFPs, public services, and infrastructure).[169] Although not without potential hazards itself, conditional land tenure has even been used as a form of payment in one Indonesian PES project.[170] Additionally, evidence suggests that local communities could help inform decisions regarding the timing of payments, as continuous cash flow will be needed in order to reflect performance based aspects of PES/REDD+. Further applied research and pilot testing could be made

167 Tacconi, L. et al., 2009. "Assessing the livelihood impacts of payments for environmental services: implications for avoided deforestation," (Research Summary), Crawford School of Economics and Government, at 4.

168 Ogonowski, M. et al., 2009. "Utilizing Payments for Environmental Services for Reducing Emissions from Deforestation and Forest Degradation (REDD) in Developing Countries: Challenges and Policy Options," Washington DC, USA: Center for Clean Air Policy, at 15.

169 See van Noordwijk, M. et al, supra note 31, at 15-18.

170 See Bond, I. et al., supra note 24, at 11-13.

regarding efficient methods for safeguarding local and indigenous community participation in the design and implementation of benefit sharing schemes.[171]

Of course, factors involved in designing benefit sharing schemes are not just economic but social, cultural, and even psychological within each community, potentially including power, gender, and generational issues as well. Although stakeholders may withhold consent or not change their behaviour should they deem opportunity costs too high or actions as illegitimate, incentive calculations left entirely to communities to calculate based on their own valuations may be too difficult and lead to adverse outcomes.

3.2 Eligibility to receive benefits

Economic and legal jargon filled considerations relating to REDD+ benefit distribution can be confusing, even perhaps to some veteran negotiators or scholars. Thus, it will be important to simplify relevant concepts at a national level for all government and public stakeholders to understand. To wit, the eligibility to receive benefits can be thought as including either or both (in a legal sense) those who have "carbon rights" and (in an economic sense) those who have "opportunity costs." Strictly as applies to conservation payments, a landholder would have legal opportunity costs if and only if that person has rights to the carbon (otherwise, she or he would have illegal opportunity costs and would not be eligible to benefit from direct payments). So, carbon rights may be considered as a fundamental threshold question to determining a class of carbon rights holders eligible for benefits, but not necessarily excluding those without such rights. Depending on the nature of deforestation in a given country, for example, benefits could be spent indirectly on those without carbon rights but with (legal or illegal) opportunity costs, such as in the form of programs to provide alternatives to illegal deforestation.

This picture becomes muddled when considering that some projects (e.g., Mexican PHAS program) provide payments to landholders for avoided deforestation on lands in which it is already illegal to cut trees. Here, it is helpful to recall that a carbon right typically does not constitute a "right" in the traditional sense of a claim to do or receive an actual activity, good, or service, but rather an indicator of who should receive an incentive due for a given carbon sequestration or maintenance service (here, in a tree). Therefore, a landholder in the circumstances of the Mexican PHAS program never had a de jure right to release the carbon, but given the de facto reality of historical high deforestation on such lands prior to the PHAS program, the program itself created that right. As a result, the legal landholder then would become endowed with carbon rights due to the program itself, and eligible to receive benefits. Should the economics of the payment program (weighing equity and effectiveness considerations) play out such that his or her opportunity (et al.) costs can be met affordably, he or she would then be accepted for the program to receive direct benefits.

Clearly, the above is a rather abstract discussion, and much more practical work will need to be devoted in coming years to clarifying which groups or individuals are eligible to receive benefits. In addition to the main actors directly responsible for deforestation (or forest conservation) discussed here, REDD+

171 Timpson, Sarah, correspondence with author. 26 April 2011 (citing numerous instances in which communities sold land and other rights for quick cash benefits that appeared favourable to them at the time, but which quickly dissipated, leaving them destitute).

benefits also will need to target a diversity of other groups contributing to deforestation indirectly, such as rural and urban consumers of fuel wood.

3.3 Equity

Balancing equity with effectiveness and efficiency in benefit distribution will require active, strategic planning. Due to the high transaction costs in registering, monitoring, and distributing benefits to many small landholders; bundling, streamlining, and simplifying procedures and legal hurdles seem essential strategies for PES and PFM-based approaches. Similarly, increasing prices paid per hectare as landholding sizes decrease could help ensure payments are adequate to meet transaction and opportunity costs. Finally, elite capture may be avoided by prioritizing eligible benefit recipients.

3.4 Tenure & Exclusivity

Many PES and REDD+ pilot schemes developed to date have made payments to individuals with secure land tenure (i.e., land and/or forest ownership, access or use rights). However, in many countries implementing REDD+, land tenure will need to be clarified for any policy approach to work effectively, especially where incentives are meant to target intended land owners and users. REDD+ presents a thorny dilemma of how to equitably, yet efficiently, resolve tenure at a wider scale, given that some 80 percent of tropical forests are officially owned by states.[172] Underlying such de jure ownership typically is found a complex, at times conflicting web of de facto customary ownership, access, or use claims of local and indigenous forest dwellers or communities.[173]

Much of the PES and REDD+ policy discussion to date has favoured individual land ownership while ignoring the fact that land is still communally shared (and occasionally communally owned) in many areas under consideration, especially where occupied by indigenous peoples. Although customary lands unrecognized by statutory authority may risk being lost to outsiders falsely claiming title, attempts to convert these arrangements into individual title have had considerable negative effects and generated opposition and confrontation based on cultural grounds.[174] In addition to greater equity, recognizing communal property rights may have important advantages in terms of efficiency (reduced transaction costs to government), effectiveness, and even sustainability, although, as noted previously, such recognition may raise issues of horizontal distribution if community elites capture most of the benefits.

Given the political and administrative difficulties of land tenure reform, some scholars have argued for a simpler solution of new legislation to allocate carbon in state forests to local and indigenous communities (although this may beg further the question of which communities should receive carbon rights). [175]

172 Agrawal, A. et al., 2008, "Changing Governance of the World's Forests," IFRI Working Paper #W08I-4, International Forestry Resources and Institutions Program, School of Natural Resources and Environment, University of Michigan, at 4 ("Central governments own by far the greater proportion – approximately 86 percent – of the 5.4 billion hectares of the world's forests and wooded areas.").

173 See generally, Knox, A. et al., supra note 21 (describing challenges to identifying property rights in developing countries and proposing alternatives to alleviate such risks).

174 See, e.g. Norton Rose, 2010. "Forest carbon rights in REDD+ countries: a snapshot of Africa," at 18, 24. URL: http://www.nortonrose.com/knowledge/publications/pdf/file32479.pdf?lang=en-gb (last checked 17 May 2011).

175 Tacconi, L. et al., supra note 173, at 3.

One PES project in the Philippines has avoided the problem of rights altogether by rewarding avoided forest fires with payments to local governments (which were invested in services and infrastructures). [176] Other lessons come from the field of PFM and the positive results from cases cited here in which governments recognized communities' common rights to resources.

In many tropical forest countries, REDD+ will require modifying the presumptive categorization of all or nearly all forest land as "State Domain" (especially prevalent in Africa) in order to incentivize better forest use and more realistically track enforcement capacities to achievable goals. The general consensus from literature based on experience to date indicates that state enforcement measures of conservation areas are very often underfinanced and ineffective when implemented in isolation. Furthermore, such sweeping designations of state territory may even provoke obstruction and attempts to thwart implementation. However, depending on local contexts, devolution of land to local communities and use of incentive based approaches alone may not be enough to adequately ensure conservation of some pristine areas or highly endangered biodiversity hotspots. In such cases, it may be important to legally delineate a limited number of priority areas where underlying, well enforced legal protections on forest lands may complement forest conservation incentives such as REDD+.[177] Outside a few such legally reinforced areas, other approaches could be pursued more flexibly, including forest conservation incentives to individual landholders and local or indigenous communities (i.e. PES or PES/PFM combination).[178]

3.5 Expanding policy approaches

This paper should demonstrate that, whether via PES, PFM, concession-based, or some combination of these or other policy approaches forms the basis of a given benefit sharing platform, REDD+ benefit distribution can embrace a wider array of financing options than only payments to individual landholders to avoid deforestation. Significantly, REDD+ (and PES generally) financing potentially may be channelled via a system of performance-based payments from central to provincial and local governments, and thereby can link national & sub-national REDD activities. In turn, those provincial and local governments then potentially could become responsible parties for ensuring reduced forest carbon emissions in the form of an appropriate mix of state programs and benefits to local and indigenous landholders aimed at incentivizing REDD+ objectives.

176 Id.

177 For example, the Mexican Program for the Payment for Environmental Hydrological Services combines forest conservation incentives with underlying bans on deforestation in the intervention areas. See, e.g., Savaresi, A. and Morgera, E. 2009. "Ownership of Land, Forest and Carbon," at 29, in Legal Frameworks for REDD, supra note 54.

178 See Karsenty, A., 2009. "REDD and PES perspectives in Central Africa," Presentation to Katoomba Meeting XV, Ghana, Integrated Solutions: Water, Biodiversity, and Terrestrial carbon in West Africa, at 7-10. URL: http://www.katoombagroup.org/event_details.php?id=32 (via 'Presentations' at upper-centre of page) (last checked 20 Nov 2010).

Key Points:

- Opportunity costs are dynamic by nature, and implementing governments would benefit greatly from the tools and capacity to accurately determine these costs for local communities and respond to changes while keeping communities involved in the process.
- Eligibility to receive benefits could be uniformly decided on a national level and designed to reflect the reality of carbon rights and opportunity costs, regardless of their tangibility or legality.
- Simplifying, streamlining, and bundling approaches to benefit distribution are promising approaches to providing equity amongst stakeholders and beneficiaries.
- Complex land-tenure issues between de jure state ownership and de facto customary landholders need creative solutions, perhaps via recognition of communities' rights to resources and/or local government rewards.

CONCLUDING THOUGHTS

As noted in the introduction, the policy approaches outlined here (and others not addressed) are not mutually exclusive. Countries may incorporate ideas from other REDD+ partners while not discarding their own domestic experiences (in forestry and finance sectors in particular). Depending on institutional and political variables, as well as the drivers targeted by the REDD+ program in question, some approaches might form a simultaneous instrument to an extent (e.g., PES and PFM). Indeed, many REDD+ implementing countries are already experimenting with several if not all of the policy approaches outlined in this paper for managing REDD+ projects and delivering benefits to participants. However, in order to avoid unnecessary transaction costs, redundancies, confusion, and competition from multiple REDD+ program instruments operating simultaneously at the national level, it will be to countries' advantages in the long run to simplify and harmonize forest policy approaches. In smaller countries with generally nationally uniform circumstances, such a strategy might even entail concentrating on one major incentive-based policy approach (or hybrid approach) providing forest conservation benefits to incentivize conservation and carbon sequestration. In larger countries with varying regional settings and relevant issues to address, a wider portfolio of policy approaches would likely be necessary. In either case, such incentives could be backstopped by focused use of traditional "fines and fences" forest law focused on regulating and enforcing critical protected areas and forest resource exploitation areas. Arguably topping all of the above considerations, harmonization of approaches among REDD+ policy choices and other NRM and sustainable development priorities and programs will be of paramount importance.

From a long-term perspective, it will be important to integrate REDD+ benefit distribution into a wider framework of environmental and natural resource management and planned sustainable development financing. As it can be presumed that resources will be tight, it will be important to strategically target benefits in order to offer important bio-geographical co-benefits with other programs and measures, particularly with climate adaptation and protected areas programs. The benefits from REDD alone (i.e., in a strict "avoided deforestation" sense) do not seem entirely sustainable, as forest dwellers, ranchers,

farmers, and loggers will all need new long-term alternative economic opportunities to replace past practices. From the perspective of leveraging benefits fully, REDD alone also would not be capable of delivering sufficiently broad and effective impacts, given the higher relative opportunity costs and more limited pool of actors and activities relative to REDD+. As populations grow and economies develop, increasing land needs will drive up opportunity costs of strict avoided deforestation, and an oversupply of pure avoided deforestation candidate beneficiaries could result. Thus, development of activities and benefit sharing methodologies for inducing behaviours under the "plus" side of REDD+ could help maximize the potential impact of carbon-sequestration and -maintenance payments. In turn, REDD+ may well be considered as supplemental financing to help foster long overdue changes in forest and agricultural practices (while maintaining continued good practices) of local and indigenous communities and commercial entities. Additionally, benefits to actors for outright avoided deforestation could also be pursued where economic and social criteria recommend. As such, REDD+ financing offers an essential opportunity to demonstrate to implementing governments and civil society the possibilities of new economic models driven by responsible businesses and self-reliant local and indigenous communities.

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ANNEX I: SUMMARY TABLE COMPARING POLICY APPROACHES

	PES	PFM	Forest Concession
Equity	(+) Potentially high if poor/marginal groups targeted	(-) JFM: Likely low return of benefits to local communities (+) CFM: Potentially high if poor/marginal groups targeted & liabilities shared	(-) Potentially low if small-holder exclusion (both from customary lands & from benefits)
Efficiency	(+) Good if opportunity costs continually estimated (-) Transaction costs in upscaling	(+) Wide potential group of beneficiaries if mixed with SF (-) Transaction costs in upscaling	(+) Low transaction costs, easily upscaled (-) Likely over-/under-payments (if uniform central payment scheme)
Effectiveness	(+) Potential for long-term sustainability (+) Potential for multiple PES instruments	(+) CFM: incentives if locally-owned /benefits (-) JFM: likely low if state-owned/controlled	(+) Provincial mgmt. allowing for local opportunity cost estimates (-) National management using uniform RS split
Land Ownership / Tenure Regime	Likely private ownership & control (but need to clarify tenure)	Mixed: • CFM: more private ownership/control • JFM: state ownership/ control	Likely state ownership; private control for term of leasehold (but potential land tenure concerns)

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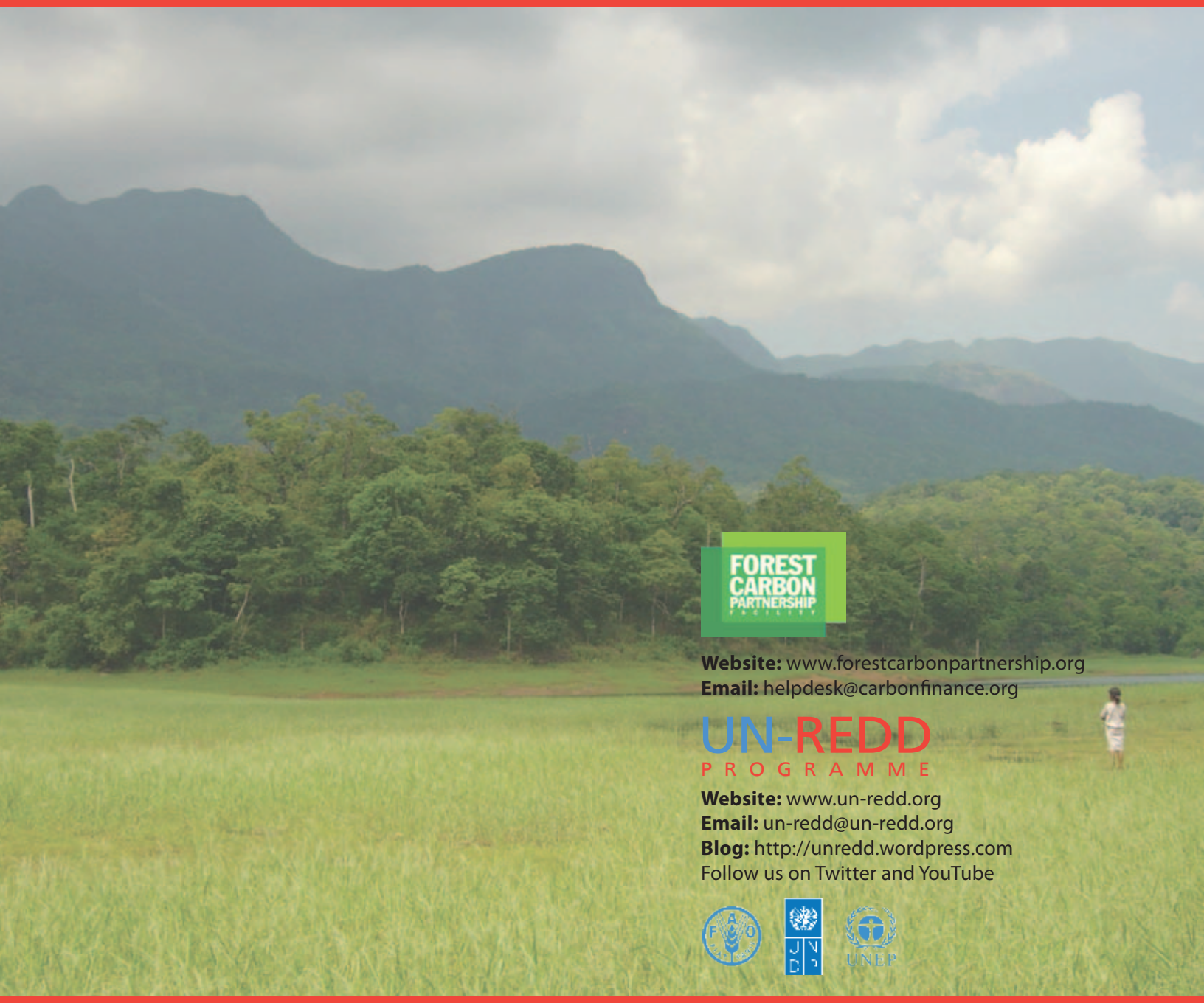

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