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Review

Getting REDD to work locally: lessons learned from integrated conservation and development projects

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ARTICLE INFO

Keywords:

Integrated conservation and development projects
REDD
REDD-plus
Principles and best practices

ABSTRACT

Integrated conservation and development projects (ICDPs) have been a pervasive, although widely criticized, approach to tropical conservation for more than 20 years. More recently, international conservation discourse has shifted away from project-based approaches and towards reducing emissions from deforestation and forest degradation (REDD). While REDD is based upon experience with payment for environmental services (PES) initiatives and forest-related discussions in the United Nations (UN), REDD implementation will still require sub-national projects. Issues of equity will likely pit these sub-national projects against some of the same challenges that have dogged ICDPs. This suggests that REDD project developers stand to learn a great deal from the lessons generated by experience with ICDPs. This paper provides a list of best practices for ICDPs and applies their lessons as principles to guide the development and implementation of sub-national REDD projects. The intent of this approach is to encourage the design and implementation of sub-national REDD projects in a way that avoids the past pitfalls and mistakes, while building upon some successes, of the ICDP conservation approach. By doing so, REDD will be more likely to be implemented in a way that is effective, efficient and equitable.

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1. Introduction

Integrated conservation and development projects (ICDPs) have been one of the most pervasive paradigms for conservation in the tropics over the last 20 years (McShane and Wells, 2004). However, forest-related discussions and proposals in the United Nations have gradually shifted the forum of conservation from local and project-driven to global in scale (Humphreys, 2006) and increased focus has become placed on institutionalizing decentralized or de-concentrated natural

resource management in developing countries (Batterbury and Fernando, 2006; Larson, 2005). As a result, the international conservation discourse has moved away from project-based conservation approaches, such as ICDPs and community-based natural resource management (CBNRM). Within this context, payments for environmental services (PES) initiatives and REDD (reduced emissions from deforestation and forest degradation) have become increasingly popular.

A global REDD framework, based on the concept of PES and UN forest negotiations, will likely incorporate tropical forest

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doi:10.1016/j.envsci.2010.01.002

conservation and management into the next global climate change agreement (Angelsen and Atmadja, 2008; Humphreys, 2008; UNFCCC, 2007, 2009). Regardless of its place within a global climate change agreement, the implementation of REDD will still require sub-national or project-scale interventions (Angelsen and Wertz-Kanounnikoff, 2008). However, little attention has been focused on how REDD projects will be implemented at this scale. The rhetoric of a sample of major REDD pilot projects, such as those implemented by the Nature Conservancy (TNC, 2009), the World Bank (IBRD, 2008) and the German Development Bank (KfW, 2009), closely resembles the rhetoric of ICDPs. This suggests that lessons from previous project-level conservation attempts, particularly lessons accumulated by ICDPs, will be essential tools for designing effective, efficient and equitable REDD projects. It is the intention of this paper to:

1. Demonstrate that developers of sub-national REDD projects have much to learn from the past successes and failures of ICDPs.
2. Identify best practices for ICDP projects based on a review of the literature.
3. Apply this list of best practices as a set of principles to guide the design and implementation of sub-national REDD projects.

1.1. Brief history of ICDPs

Integrated conservation and development projects (ICDPs) are typically defined as conservation projects that include rural development components (Hughes and Flintan, 2001; Sanjayan et al., 1997; Wells et al., 1999). This suite of conservation projects originally sought to combine goals for development and conservation within the framework of individual projects as a means for achieving sustainable development (McShane and Wells, 2004). The original rationale behind the use of ICDP projects was a purported link between poverty and declines in tropical biodiversity and forest cover (Robinson and Redford, 2004). Proponents of ICDPs presumed that providing rural communities with alternative livelihoods and reducing poverty would, therefore, lead to effective conservation (Sanjayan et al., 1997). It was also often assumed that poverty alleviation and development would serve to increase community receptiveness to conservation by providing just compensation to communities for restricted forest access (Abbot et al., 2001). However, the link between poverty and conservation has proven to be highly speculative (Adams et al., 2004; Roe, 2008) and ICDPs have a poor track record (McShane and Wells, 2004; Wells, 2003). This has led to critiques of the underlying assumptions of ICDPs (McShane and Newby, 2004) and calls for a complete abandonment of the ICDP approach (Engel et al., 2008; Horwich and Lyon, 2007; Terborgh, 2000; Wells, 2003).

Despite criticism, ICDPs continue to be a highly pervasive tool for conservation practice throughout the tropics, whether conservation initiatives are explicitly labeled as ICDPs or not (Wells et al., 2004). Many conservationists continue to favor ICDPs over other conservation frameworks, particularly fortress or barrier-style conservation that ignores the needs and resource rights of local communities (Hutton et al., 2005;

Romero and Andrade, 2004). Furthermore, a number of publications suggest that the relative success of the ICDP approach may be dependent on the way in which projects are designed and implemented, as well as on the contexts in which they are placed (Fisher et al., 2005; Garnett et al., 2007; Hill, 2007; Robinson and Redford, 2004; Sanjayan et al., 1997). Regardless of their outcomes, ICDPs provide an informative set of lessons for how to, as well as how not to, implement project-level tropical conservation.

1.2. Brief background on REDD and REDD-plus

Tropical forests are widely cited to account for 18% of annual global greenhouse gas emissions due to deforestation caused by land use change, and forest degradation caused by fire, resource extraction and the draining of peat lands (IPCC, 2007b). Despite global importance as a source of carbon emissions, tropical forest conservation and management was not included as a carbon credit-generating activity within the currently active global climate change agreement, the Kyoto Protocol. At the 13th Conference of the Parties (COP-13) in 2007, the Bali Action Plan outlined a path forward for the realization of a global framework for reduced emissions from deforestation and forest degradation, or REDD (UNFCCC, 2007).

Current REDD negotiations have evolved within the context of United Nations negotiations regarding the conservation of tropical forests that have been occurring since the UN Conference on Environment and Development in Rio de Janeiro in 1992 (Humphreys, 2008). Since this time, the UN (under the IPF, IFF and UNFF) has issued hundreds of non-legally binding proposals regarding global forest management. Despite some successes, these negotiations have been widely criticized for leading to insufficient progress on key tropical forest issues (Asadi, 2008; Capistrano et al., 2007; Humphreys, 2006). More recently, the Bali Action Plan created the *ad hoc* Working Group on Long Term Cooperative Action under the Convention (AWG-LTC), which has been involved in ongoing negotiations regarding the scope, incentive structure and financing of REDD (UNFCCC, 2007).

During negotiations in the AWG-LCA, the scope of REDD has broadened with the adoption of a new acronym, REDD-plus (UNFCCC, 2009). Whereas REDD was originally intended to incentivize reduced carbon emissions from deforestation and forest degradation, REDD-plus also provides incentives for increases in carbon stocks and allows for emission reduction credits from a wider array of forest management practices. Improvements to logging practices, forest fire prevention, afforestation/reforestation and sustainable forest management, in addition to forest conservation, became potential credit-generating activities under REDD-plus (UNFCCC, 2009). Accounting for REDD will likely be conducted at the national level with sub-national implementation (Angelsen et al., 2008; Angelsen and Wertz-Kanounnikoff, 2008). At this sub-national or project level, many demonstration and pilot REDD projects have already been initiated as a result of the Bali Action Plan (UNFCCC, 2007). Sub-national projects are required to undergo third party methodology and project design validation and emission reductions must be verified to ensure unbiased reporting (Wertz-Kanounnikoff et al., 2008). These safeguards

set REDD apart from previous attempts at project-based conservation such as ICDPs.

The REDD concept emerged out of experience with payments for environmental services (PES) initiatives, which are voluntary transactions wherein environmental service buyers compensate environmental service providers (Wunder, 2005). Services include watershed protection, carbon sequestration and biodiversity conservation. True PES must also have a payment system that is conditional on the actual provision of the environmental service (Wunder, 2005). In the case of REDD, the environmental service is reduced carbon emissions from forests. However, REDD differs from true PES in that REDD will likely include official development assistance (ODA) that will not be conditional on the provision of carbon emission reductions (Dutschke et al., 2008; UNFCCC, 2009).

1.3. Issues of REDD equity, and the relevance of ICDPs

Despite the PES and UN origins of REDD, the implementation of sub-national REDD projects pits REDD against some of the same obstacles that have dogged ICDPs. Firstly, forest-dependent communities will likely demand short-term livelihood improvements that are not always compatible with the long-term objectives of forest conservation (Brown, 2004). Secondly, the benefits of conservation are largely global while the cost of conservation is largely incurred by forest-dwelling communities that must forego exploitation for the sake of conservation (Kremen et al., 2000). These issues are particularly important given the current global trend towards the decentralization and/or de-concentration of natural resource management in the tropics (Batterbury and Fernando, 2006; Larson, 2005). While significant differences do exist between REDD and ICDPs, these similarities suggest that lessons should be taken from the history of ICDPs for the purposes of sub-national REDD implementation.

Equitability in the benefit sharing of REDD has implications for the effectiveness and efficiency of the REDD strategy as a whole (Table 1). Some observers also argue that there is a moral obligation of the global community to design REDD in a

way that is equitable for poor, forest-dwelling communities (Brown et al., 2008; Peskett et al., 2008). This obligation exists because while climate change has been disproportionately caused by developed nations and the wealthy, climate change will likely most significantly impact poor communities (IPCC, 2007a). Parameters for assessing the equitability, as well as the effectiveness and efficiency, of REDD projects could be put in place (Angelsen and Wertz-Kanounnikoff, 2008). However, accurate assessments require long-term monitoring that may be too slow and/or labor intensive to prevent early project failures. Therefore, emphasis should be placed on designing equitable, effective and efficient projects in the first place.

Many forest-dwelling and/or indigenous communities are highly skeptical of REDD for its potential to restrict access and extraction rights to their land (IFIPCC, 2007). Many of these communities are highly reliant on forest access for their livelihoods (Shepherd, 2004). Therefore, restrictions placed on community access to forest for the sake of carbon conservation have highly significant livelihood and cultural implications. On the other hand, REDD has the potential to provide significant benefits to these same communities by providing new and supplementary environmental service incomes (Brown et al., 2008; Luttrell et al., 2007; Peskett et al., 2008).

Forest-dwelling communities likely have reason to be skeptical of REDD. Analyses of PES programs in the past have shown mixed results in their ability to benefit small and poor landholders (Pagiola, 2008; Zbinden and Lee, 2005). The Kyoto Protocol's Clean Development Mechanism (CDM) has failed to yield substantial benefits for small and poor landholders, despite having sustainable development as a stated objective (Boyd et al., 2007). The high transaction costs required for PES registration often preclude the participation of these landholders. In addition, many forest-reliant communities are unable to benefit from PES because they lack legal recognition of land claims (Boyd et al., 2007; Campbell et al., 2009). In Costa Rica for example, a national law forbade ecosystem service payments to residents lacking legal title. This effectively excluded the participation of many poor and rural farmers and inhibited the program's effectiveness in some areas (Pagiola, 2008). As a result, distribution mechanisms may need to go

Table 1 – Impacts on the three criteria for REDD of a failure of each of these criteria.

Three sets of criteria for successful REDD			
Effectiveness		Efficiency	Equitability
Outcomes of criteria failures on other criteria			
Ineffective		Funding will stop flowing into the REDD project	Forest communities will continue to receive inadequate compensation for the benefits of forest conservation and sustainable management
Inefficient	Not enough funds will reach the ground to incentivize REDD activities		Forest communities will continue to receive inadequate compensation for the benefits of forest conservation and sustainable management
Inequitable	Communities may disrupt REDD activities through the use of fire, illegal extraction, etc.	Increased funding may be required to protect REDD sites from communities that have been inadequately compensated	

Adapted from Angelsen and Wertz-Kanounnikoff (2008).

beyond traditional PES in order to ensure REDD equity, effectiveness and efficiency.

As a result of a push for the sharing of benefits from REDD with forest-dwelling communities and the perception that a strict PES approach would be insufficient for doing so, some conservation practitioners have suggested the inclusion of development components in REDD project implementation plans (Brown et al., 2008; Luttrell et al., 2007). As a result, similarities will inevitably exist between ICDPs and sub-national REDD projects. However, it is unclear whether the developers of sub-national REDD projects are building upon, or re-learning, the experiences of ICDPs. What is clear, however, is that if these REDD projects fail to draw on the vast experiences of ICDPs, they are likely to succumb to some of the same pitfalls and weaknesses that have dogged ICDPs for over 20 years.

2. Lessons learned from ICDPS for REDD implementation

A list of 15 best practices for ICDPs was identified from a literature review of the successes and failures of ICDPs (adapted from: Hill, 2007; McCallum and Sekhran, 1997; OECD, 2000). The relevance of each best practice to REDD was then determined from a review of the REDD literature. These best practices should ultimately be used as principles to drive the implementation of REDD sub-national projects. The first four ICDP best practices will almost certainly be achieved during the transition from ICDPs to REDD. The subsequent eleven ICDP best practices will require greater diligence if they are to be achieved by REDD projects.

2.1. ICDP best practices likely to be achieved by REDD

2.1.1. Have measurable and clearly defined goals

ICDPs have been criticized for not clearly defining measurable project goals and for not explicitly identifying the ultimate project goal, whether it be conservation or development (Robinson and Redford, 2004). The goals for sub-national REDD projects must be clearer because of explicit requirements for project design validation and because reduced carbon emissions and/or increased forest carbon stocks will usually be the ultimate project objective. In addition, progress towards the emission reduction goals of REDD must be clear, measurable and verifiable for payments to occur (Angelsen and Wertz-Kanounnikoff, 2008).

2.1.2. Project duration should reflect the time commitment needed to achieve goals

ICDPs have been routinely criticized for being based on short funding cycles that do not reflect the length of commitment required to make their projects work (Chan et al., 2007; Fisher et al., 2005; Sayer and Wells, 2004). In one example from Nepal, ICDP outcomes were improved as the duration of the project increased, reflecting the time commitment needed to change community perceptions and attitudes towards conservation (Baral et al., 2007). The problem of short project duration will likely be overcome by REDD because projects will need to be based on long-term performance to ensure the permanence of

forest carbon emission reductions (Dutschke and Angelsen, 2008). Also, project financing through carbon markets will likely allow for long-term financing that was rare during ICDP implementation.

2.1.3. Markets must be available for participants' products and services

Many ICDPs have encouraged the development of alternative livelihoods for forest-dwelling communities. However, these projects have experienced difficulty in finding markets for the products resulting from these alternative livelihoods. This has acted as a barrier to ICDP success (Fisher et al., 2005). PES programs for biodiversity or watershed protection have also struggled to generate service payments because there is no active international market for these services. REDD, on the other hand, could provide communities with access to new monetary incentives for forest protection and management through the already active carbon market (Peskett et al., 2008). Indeed, the ability of REDD to tap into market funding for forest conservation is what attracted many conservationists to the REDD concept in the first place (Kanninen et al., 2007).

2.1.4. Mechanism should be in place for monitoring and evaluation

ICDPs have struggled in the past with designing appropriate methods for monitoring and evaluating project progress and outcomes. This has prevented ICDP self-assessments and the accumulation of shared experiences that is required for projects to avoid common mistakes (Fisher et al., 2005). It has also prevented the use of adaptive approaches to project management (best practice 10) (Salafsky and Margoluis, 2004). Because REDD projects will be performance based, mechanisms for monitoring, reporting and verifying (MRV) emission reductions are a pre-requisite for projects (Wertz-Kanounnikoff et al., 2008). On the other hand, social and non-carbon environmental project benefits (i.e. biodiversity) are more difficult to measure. Regardless, parameters for assessing these benefits should also be a project pre-requisite.

2.2. ICDP best practices that require attention during REDD implementation

2.2.1. National policies should support project activities

In many cases, national policies and decisions have been some of the most significant barriers to ICDP success (Gezon, 1997; Linkie et al., 2008) and some of the most significant underlying drivers of tropical deforestation and forest degradation (Kanninen et al., 2007; Martin, 2008). At one ICDP in Sumatra, Indonesia, project outcomes were unaffected by project interventions themselves but were highly influenced by the presence of national logging concessions in the project area (Linkie et al., 2008). In the Lower Mekong region, three of the ten main threats to ICDPs are infrastructure, dam and mine projects in or around the project site. These threats are generally the result of national decisions, as well as conflicting national policies (CIFOR, 2009).

In regards to REDD, governments will need to consider the environmental externalities of their policies to a great extent in order to meet emission reduction goals (Kanninen et al., 2007). In addition, national governments must enact legisla-

tion to support sub-national projects in order for REDD to be successful at both the national and sub-national scale. This may be difficult in situations where coordinated, cross-sectoral decision-making is rare. Given the complexity of the problem of deforestation and forest degradation, this cross-sectoral approach is needed for REDD to be successful.

2.2.2. *Locally-based conservation should be applied where threats and solutions are local*

ICDPs have a history of managing threats that emerge from outside the scope of their project particularly poorly. As a result, ICDPs are more successful when threats to conservation initiatives are largely local than when they are largely external (Robinson and Redford, 2004). This weakness of ICDPs is due to the fact that projects are ineffective at working at the multiple scales needed to address external and landscape-scale threats such as plantation expansion and population migration (Sayer and Wells, 2004).

External threats to REDD at the project level include highly organized illegal logging, landscape-level plantation expansion, immigration to project sites and national infrastructure development (Kanninen et al., 2007). Sub-national projects cannot be expected to independently address these external threats. Instead, they must be dealt with through collaboration between sub-national and national actors, as well as through the use of trade-based initiatives at the international scale (Kanninen et al., 2007). This multi-scale approach may be incompatible with top-down management, which characterizes natural resource decision-making in many tropical nations (Nanang and Inoue, 2000).

2.2.3. *Recognize and acknowledge tradeoffs between conservation and development*

Evaluations of ICDPs have suggested that win-win situations, wherein development goals and conservation goals are achieved in the same project at the same time, are exceedingly rare. Experience suggests instead that conservation and development exist as tradeoffs and should be acknowledged and negotiated as such during project planning (Chan et al., 2007; McShane and Newby, 2004; Robinson and Redford, 2004; Sunderland et al., 2008). Confusing the situation is the fact that the costs and benefits of forest conservation accrue at different spatial scales. At the local scale strict conservation may have significant costs for local communities, whereas at the global scale forest conservation provides significant benefits (Kremen et al., 2000). Despite evidence of a tradeoff between conservation and development, this tradeoff was rarely acknowledged in a survey of ICDPs in the Lower Mekong region (Hill, 2007).

REDD projects must acknowledge the tradeoffs between development and carbon emission reductions. Acknowledging that these tradeoffs exist would allow project negotiations to move beyond some of the disproved rhetoric of original ICDPs and towards a more realistic appraisal of the likely impact of conservation (Chan et al., 2007; Sunderland et al., 2008). Although forest management almost universally decreases forest carbon stocks as a result of forest product removal, community forest management will likely be an essential component of many equitable REDD projects (Peskett et al., 2008). Negotiations for the design of projects

should acknowledge this tradeoff and work towards an agreement that is acceptable for both communities and REDD verifiers and appraisers.

2.2.4. *Develop an understanding of community heterogeneity and complexity*

Communities are not static, homogenous or generalizable entities. Instead they can be highly heterogenic and complex. ICDPs have often ignored the complexity and heterogeneity of communities during project planning and implementation. This has contributed to poor project outcomes by leading to resource disputes and capture of project benefits by community elites (Brown, 2004; McShane and Newby, 2004).

Because REDD will likely be implemented in such a wide variety of institutional and cultural settings, there is a major risk that nations will take a 'one size, fits all' approach to REDD implementation that ignores ethnic and community complexities. Even approaches to REDD that address issues of equitability run the risk of simplifying compensation distribution for the sake of greater project efficiency (Brown et al., 2008). This could lead to elite capture of REDD benefits, which could in turn cause conflicts over compensation. Without adequate compensation, non-elite community members will likely continue to convert and degrade forest. This will lead to ineffective and inefficient projects, as well as carbon leakage (for more on carbon leakage see Wunder, 2008).

2.2.5. *Develop an understanding of community livelihood needs*

In many forest-dwelling communities, forests provide essential building materials, medicine, income and food (Shepherd, 2004). Sustainable and resilient ICDPs have acknowledged and accounted for these needs. This accounting can be achieved by encouraging greater levels of community involvement in project planning and monitoring (Boissiere et al., 2009).

In the design of REDD projects, the livelihood needs of local communities must be understood and considered a major part of project baseline negotiations and planning. Forest access and management is essential to maintain functioning forest-dwelling communities and cultures (Shepherd, 2004). It will also be essential to implementing resilient REDD projects (Peskett et al., 2008). Disagreements over small-scale extraction rights could become a significant point of contention between communities and project implementers if not accounted for during REDD project design.

2.2.6. *Design projects to be adaptive and flexible*

Some assessments of ICDPs have called for projects to adopt adaptive management approaches to project design (Salafsky and Margoluis, 2004; Wells and McShane, 2004). Adaptive management provides continuous interaction between project design, monitoring and management. This allows for projects that are flexible enough to respond to project outcomes and changes in context, which leads to projects that are more resilient (Salafsky and Margoluis, 2004).

Trees accumulate and store carbon on a much longer time scale than the economic and social cycles that impact changes in rates of deforestation and forest degradation. Therefore, REDD projects that are able to adjust and respond to changing economic and social contexts will likely be more resilient and

sustainable than rigidly designed projects. The rigidity of the clean development mechanism (CDM) has been identified as one reason why its system of compensation for reforestation has been inaccessible for poor landholders and largely ineffective (Boyd et al., 2007). The prospect of a changing climate provides additional need for adaptable projects (CIFOR, 2008). To this end, threat modeling at the landscape scale could be used to inform project interventions under multiple economic and social scenarios (Harris et al., 2008; Sandker et al., 2007). Adaptive collaborative management has also been proposed as a tool for designing responsive and resilient REDD projects (CIFOR, 2008).

2.2.7. *Involve the community in all phases of the project*

The majority of first generation ICDPs were designed in a top-down fashion, in which the rules and guidelines for projects were established by outsiders and community participation was largely symbolic (Sayer and Wells, 2004). Evaluations of ICDPs have called for more collaborative decision-making between project planners and communities (Wells and McShane, 2004). Conceptual models for doing this include adaptive governance (Brunner et al., 2005), adaptive collaborative management (Colfer, 2005), and community-based natural resource management (Fisher et al., 2005). These approaches all emphasize the importance of substantial engagement within and between communities in all aspects of projects, including planning, monitoring and evaluation, and project decision-making. These approaches allow communities to become invested and engaged in projects, which creates long-term project support within the community (Boissiere et al., 2009). Preliminary analyses of ICDPs in the Lower Mekong region suggest that community participation and consultation are associated with better conservation outcomes (Preece et al., 2009).

For the design of REDD projects, the effectiveness of attempts to integrate communities into substantive dialogues during the planning process will likely determine the equity, and ultimately the effectiveness and efficiency, of projects (Peskett et al., 2008). By taking a bottom-up approach to REDD project planning and implementation, the needs and concerns of communities are more likely to be addressed, understood and considered. Free, prior and informed consent (FPIC) has recently increased in popularity as a standard to ensure community engagement (Colchester and Ferrari, 2007). Undoubtedly, not all community demands will result in progress towards emission reduction goals. In these cases, community needs should be negotiated as tradeoffs, as described in best practice 7.

2.2.8. *Collaborate with other projects*

Collaboration between and within individual projects has been suggested to greatly facilitate shared learning and integrated project decision-making (Colfer, 2005). In the past, competing NGOs and practitioners have worked largely independently, reducing the ability of projects to learn from the experiences of other projects (Salafsky and Margoluis, 2004). For example, in Vietnam's Cat Ba National Park, poor communication among organizations working in the area has led to wasted resources and repeated mistakes (Brooks, 2006). Greater collaboration between projects also facilitates landscape scale conservation, which makes project implementa-

tion easier and more robust (Fisher et al., 2005; Garnett et al., 2007; Robinson and Redford, 2004).

Given the fragmented nature of previous attempts at project-based conservation many participants in the REDD debate argue that greater integration and coordination could instead be achieved by abandoning the project approach altogether in exchange for a national approach to REDD (Angelsen et al., 2008). However, without interventions at the sub-national and project level, equity may be difficult to achieve (see Section 1.3).

2.2.9. *Engage in activities that you know, collaborate with others for activities that you do not*

One pitfall of ICDPs is that they spread themselves too thin with a wide range of development and conservation activities in an attempt to access a range of funding sources (Roe, 2008). Oftentimes these activities are done without specialized expertise. As a result, ICDPs have gained the reputation for doing many things, none of which they do particularly well (Robinson and Redford, 2004). Preliminary analyses of ICDPs in the Lower Mekong region suggest that ICDP stakeholders are more effective when engaged in strict conservation or strict development activities, as opposed to a mixture of both (CIFOR, 2009). The domination of biological conservationists in ICDPs has particularly impaired the ability of projects implementers to engage communities in project activities (Chan et al., 2007).

Technical assistance provided by experts in a wide range of disciplines should be provided at the national and sub-national level for the purposes of REDD project design and implementation (Peskett et al., 2008). This should include assistance from anthropologists who can help tailor projects to specific cultural contexts, conservationists who can help ensure biodiversity co-benefits and development experts who have experience with compensation distribution in rural communities. An approach to REDD that instead relies exclusively on economists, financiers and GIS experts will likely result in many failed projects.

2.2.10. *Enforcement is always needed*

It would be convenient if effective project design precluded the need for project enforcement. However, this is hardly ever the case. In Indonesia, enforcement of laws and regulations has had a large impact on the eventual success of ICDPs (Wells et al., 1999). Even with community engagement in projects, threats and the need for enforcement will always exist.

In the case of REDD, enforcement will be a significant component and cost of projects (Lubowski, 2008). Regardless of community engagement, not all community members will support REDD activities in their community and encroachment from outsiders into project areas is likely. In addition, REDD has been suggested to be vulnerable to corruption and manipulation by organized crime (Vidal, 2009).

2.2.11. *Provide clear and sustainable community benefits*

Some analyses of ICDPs have suggested that providing visible and sustainable benefits for communities at an early stage results in improved outcomes (Chan et al., 2007). Non-monetary development benefits, such as medical supplies and educational tools, are more likely to provide visible and sustained benefits to an entire community. Monetary benefits,

on the other hand, may be concentrated in the hands of community elites and may not result in clearly visible and sustainable community-wide benefits.

Providing benefits in a way that strikes an appropriate balance between non-monetary, visible, community-wide benefits and monetary, performance-based benefits may need to be determined on a site by site basis for REDD (Luttrell et al., 2007). In communities that have good governance structures for equitably distributing money, it may make sense to distribute only monetary benefits. However, in situations where governance structures and distribution mechanisms are weak, the use of non-monetary benefits may be needed to ensure equity. Although this means that payments are not a traditional or core PES scheme, the realities of the tropics may require this type of mixed payment scheme (Campbell et al., 2009).

3. Conclusions

This paper is intended to provide REDD implementers and negotiators with a guide to avoiding the pitfalls and mistakes, while building upon some relative successes, of the ICDP conservation approach. It is not intended to suggest that all REDD projects should be designed following the ICDP framework, or that the preceding best practices/principles will guarantee effective, efficient and equitable REDD. REDD is far more complex than the ICDP approach. The ultimate success of REDD depends on the establishment of appropriate and complementary REDD mechanisms at the international and national level in addition to the establishment of appropriate and complementary projects at the sub-national level. However, the experiences of ICDPs show that the design, context and implementation of projects at the local-level are extremely important for determining ultimate project success.

This paper also argues that REDD implementation approaches built upon the lessons of ICDPs will be more effective, efficient and equitable. There is no doubt that REDD has the potential to provide a new way forward for tropical forest conservation and management. However, we have seen conservation silver bullets before. Market access for non-timber forest products (NTFPs), ICDPs, forest certification, and community-based natural resource management (CBNRM) were all once believed to be the new way forward for tropical forest conservation. Each of these approaches has turned out to be based on impracticable assumptions when applied in the field and have not met the high expectations set for them. Will REDD be the next on this list? If REDD schemes are designed and implemented in a way that builds upon the lessons of the past, particularly the lessons of ICDPs, then REDD could move tropical conservation forward in a way that these other mechanisms have not done as yet. However, if these lessons are ignored, we will likely be discussing the mistakes of REDD in much the same way that we are currently discussing the mistakes of ICDPs.

Acknowledgements

Contributors to the MacArthur Foundation Lower Mekong project at CIFOR, provided support and advice during the

writing process. The Tropical Resources Institute, Council of Southeast Asian Studies and Internship Fund at the Yale School of Forestry and Environmental Studies provided support for this research.

REFERENCES

- Abbot, J.I.O., Thomas, D.H.L., Gardner, A.A., Neba, S.E., Khen, M.W., 2001. Understanding the links between conservation and development in the bamenda highlands, Cameroon. *World Development* 29, 1115–1136.
- Adams, W., Aveling, R., Brockington, D., Dickson, B., Elliott, J., Hutton, J., Roe, D., Vira, B., Wolmer, W., 2004. Biodiversity conservation and the eradication of poverty. *Science* 306, 1146–1149.
- Angelsen, A., Atmadja, S., 2008. What is this book about? In: Angelsen, A. (Ed.), *Moving Ahead with REDD*. CIFOR, Bogor, Indonesia, pp. 1–9.
- Angelsen, A., Streck, C., Peskett, L., Brown, J., Luttrell, C., 2008. What is the right scale for REDD. In: Angelsen, A. (Ed.), *Moving Ahead with REDD*. CIFOR, Bogor, pp. 31–40.
- Angelsen, A., Wertz-Kanounnikoff, S., 2008. What are the key design issues for REDD and the criteria for assessing options. In: Angelsen, A. (Ed.), *Moving Ahead with REDD*. CIFOR, Bogor, pp. 11–21.
- Asadi, B., 2008. International forest deliberations, processes and civil society: an historical account (1992–2007). *International Forestry Review* 10, 657–669.
- Baral, N., Stern, M.J., Heinen, J.T., 2007. Integrated conservation and development project life cycles in the Annapurna Conservation Area, Nepal. *Biodiversity and Conservation* 16, 2903–2917.
- Batterbury, S.P.J., Fernando, J.L., 2006. Rescaling governance and the impacts of political and environmental decentralization: an introduction. *World Development* 34, 1851–1863.
- Boissiere, M., Sheil, D., Basuki, I., Wan, M., Le, H., 2009. Can engaging local people's interests reduce forest degradation in Central Vietnam? *Biodiversity and Conservation* 18, 1–15.
- Boyd, E., Gutierrez, M., Chang, M., 2007. Small-scale forest carbon projects: adapting CDM to low-income communities. *Global Environmental Change* 17, 250–259.
- Brooks, A., 2006. In: IUCN (Eds.), *Enhancing the Effectiveness of Projects on Cat Ba Island—An Evaluation of Ten Years of International Support*. Viet Nam Country Office, Hanoi (draft report).
- Brown, D., Seymour, F., Peskett, L., 2008. How do we achieve REDD co-benefits and avoid doing harm? In: Angelsen, A. (Ed.), *Moving Ahead with REDD*. CIFOR, Bogor, pp. 107–118.
- Brown, K., 2004. Trade-off analysis for integrated conservation and development. In: McShane, T.O., Wells, M.P. (Eds.), *Getting Biodiversity Projects to Work*. Columbia University Press, New York, pp. 232–255.
- Brunner, R.D., Steelman, T.A., Coe-Juell, L., 2005. *Adaptive Governance*. Columbia University Press, New York.
- Campbell, B., Wunder, S., Thu Thuy, P., Petheram, L., 2009. Personal communication: payments for environmental services and poverty. Received by Blom, B. June 4, 2009, CIFOR, Bogor, Indonesia.
- Capistrano, D., Kanninen, M., Guariguata, M.R., Barr, C., Sunderland, T., Raitzer, D., 2007. Revitalizing the United Nations forum on forests: critical issues and ways forward. In: *Forests and Governance Program*. Center for International Forestry Research, Bogor, Indonesia.
- Chan, K.M.A., Pringle, R.M., Ranganathan, J., Boggs, C.L., Chan, Y.L., Ehrlich, P.R., Haff, P.K., Heller, N.E., Al-Khafaji, K.,

- Macmynowski, D.P., 2007. When agendas collide: human welfare and biological conservation. *Conbio* 21, 59–68.
- CIFOR, 2008. Adaptive collaborative management can help us cope with climate change. In: Colfer, C.J.P., Prabhu, R. (Eds.), *Infobriefs*. CIFOR, Bogor.
- CIFOR, 2009. Losing less and winning more: building capacity to go beyond the trade-offs between conservation and development in the Lower Mekong. In: Yen, M.H., Sunderland, T.C.H. (Eds.), *Livelihood Brief No. 12*. CIFOR, Bogor (February).
- Colchester, M., Ferrari, M.F., 2007. Making FPIC work: challenges and prospects for indigenous peoples. FPIC Working Papers. Forest Peoples Programme, Moreton-in-Marsh, England.
- Colfer, C.J.P., 2005. The complex forest: communities, uncertainty, and adaptive collaborative management. *Resources for the Future*. Washington, DC.
- Dutschke, M., Angelsen, A., 2008. How do we ensure permanence and assign liability? In: Angelsen, A. (Ed.), *Moving Ahead with REDD*. CIFOR, Bogor, pp. 77–85.
- Dutschke, M., Wertz-Kanounnikoff, S., Peskett, L., Luttrell, C., Streck, C., Brown, J., 2008. How do we match country needs with financing sources? In: Angelsen, A. (Ed.), *Moving Ahead with REDD*. CIFOR, Bogor, pp. 41–52.
- Engel, S., Pagiola, S., Wunder, S., 2008. Designing payments for environmental services in theory and practice: an overview of the issues. *Ecological Economics* 65, 663–674.
- Fisher, R.J., Maginnis, S., Jackson, W.J., Barrow, R., Jeanrenaud, S., 2005. *Poverty and Conservation*. IUCN, Gland, Switzerland/Cambridge, UK.
- Garnett, S.T., Sayer, J.A., du Toit, J., 2007. Improving the effectiveness of interventions to balance conservation and development: a conceptual framework. *Ecology and Society* 12, 2.
- Gezon, L., 1997. Institutional structure and the effectiveness of integrated conservation and development projects: case study from Madagascar. *Human Organization* 56, 462–470.
- Harris, N.L., Petrova, S., Stolle, F., Brown, S., 2008. Identifying optimal areas for REDD intervention: East Kalimantan, Indonesia as a case study. *Environmental Research Letters* 3, 1–11.
- Hill, E., 2007. *Design of Integrated Conservation and Development Projects in the Lower Mekong*. Master of Tropical Environmental Management. Education, Health & Science, CDU, Northern Territory, Australia.
- Horwich, R.H., Lyon, J., 2007. Community conservation: practitioners' answer to critics. *Oryx* 41, 376–385.
- Hughes, R., Flintan, F., 2001. *Integrating Conservation and Development Experience: Biodiversity and Livelihoods Issues No. 3*. IIED, London.
- Humphreys, D., 2006. *Logjam: Deforestation and the Crisis of Global Governance*. Earthscan, London.
- Humphreys, D., 2008. The politics of 'avoided deforestation': historical context and contemporary issues. *International Forestry Review* 10, 433–442.
- Hutton, J., Adams, W., Murombedzi, J.C., 2005. Back to the barriers?: changing narratives in biodiversity conservation. *Forum for Development Studies* 32, 341–357.
- IBRD, 2008. In: IBRD (Eds.), *Charter Establishing the Forest Carbon Partnership Facility*. World Bank, Washington, DC.
- IFIPCC, 2007. In: *Negotiations, U.C. (Ed.), Statement by the IFIPCC on 'Reduced Emissions from Deforestation and Forest Degradation' (REDD) Agenda Item at the UNFCCC Climate Negotiation*. IFIPCC, Bali.
- IPCC, 2007a. *Climate Change 2007: Impacts, Adaptation and Vulnerability*. IPCC, New York.
- IPCC, 2007b. In: IPCC (Eds.), *Climate Change 2007: The Physical Science Basis*. IPCC, New York.
- Kanninen, M., Murdiyarso, D., Seymour, F., Angelsen, A., Wunder, S., German, L., 2007. *Do Trees Grow on Money?* CIFOR, Bogor.
- KFW, 2009. *Programme—Forest and Climate Protection*. , [online]http://www.kfw-entwicklungsbank.de/EN_Home/Countries_Programmes_and_Projects/Asia/Indonesia/Pr9ogramme_-_Forest_and_climate_protection.jsp.
- Kremen, C., Niles, J.O., Dalton, M.G., Daily, G.C., Ehrlich, P.R., Fay, J.P., Grewal, D., Guillery, R.P., 2000. Economic incentives for rain forest conservation across scales. *Science* 288, 1828–1832.
- Larson, A.M., 2005. Democratic decentralization in the forestry sector. In: Colfer, C.J.P., Capistrano, D. (Eds.), *The Politics of Decentralization*. Earthscan, London, pp. 32–62.
- Linkie, M., Smith, R.J., Zhu, Y., Martyr, D.J., Suedmeyer, B., Pramono, J., Leader-Williams, N., 2008. Evaluating biodiversity conservation around a large Sumatran protected area. *Conbio* 22, 683–690.
- Lubowski, R.N., 2008. What are the costs and potentials of REDD? In: Angelsen, A. (Ed.), *Moving Ahead with REDD*. CIFOR, Bogor, pp. 23–30.
- Luttrell, C., Schreckenberger, K., Peskett, L., 2007. The implications of carbon financing for pro-poor community forestry. In: Brown, D. (Ed.), *Forestry Briefing*, vol. 14. FPEP, London.
- Martin, R.M., 2008. Deforestation, land-use change and REDD. *Unasylva* 59, 3–11.
- McCallum, R., Sekhran, N., 1997. Race for the rainforest: evaluating lessons from an integrated conservation and development "experiment" in New Ireland, Papua New Guinea. In: *PNG Biodiversity Conservation and Resource Management Program*, Waigani.
- McShane, T.O., Newby, S.A., 2004. Expecting the unattainable: the assumptions behind ICDPs. In: McShane, T.O., Wells, M.P. (Eds.), *Getting Biodiversity Projects to Work*. Columbia University Press, New York, pp. 49–74.
- McShane, T.O., Wells, M.P., 2004. Integrated conservation and development? In: McShane, T.O., Wells, M.P. (Eds.), *Getting Biodiversity Projects to Work*. Columbia University Press, New York, pp. 3–9.
- Nanang, M., Inoue, M., 2000. Local forest management in Indonesia: a contradiction between national forest policy and reality. *International Review for Environmental Strategies* 1, 175–191.
- OECD, 2000. Capacity development in environment: lessons learned, 3. In: *Evaluation and Effectiveness*, OECD.
- Pagiola, S., 2008. Payments for environmental services in Costa Rica. *Ecological Economics* 65, 712–724.
- Peskett, L., Huberman, D., Bowen-Jones, E., Edwards, G., Brown, J., 2008. *Making REDD work for the poor*. Poverty Environment Partnership.
- Preece, L.D., Cangas, B.H., Achdiawan, R., Sunderland, T.C.H., Ruiz Perez, M., Campbell, B., Stacey, N., 2009. Personal communication: conservation in the Lower Mekong: preliminary analysis. Received by Blom, B. June 2, 2009, CIFOR, Bogor.
- Robinson, J.G., Redford, K.H., 2004. Jack of all trades, master of none: inherent contradictions among ICD approaches. In: McShane, T.O., Wells, M.P. (Eds.), *Getting Biodiversity Projects to Work*. Columbia University Press, New York, pp. 10–34.
- Roe, D., 2008. The origins and evolution of the conservation-poverty debate: a review of key literature, events and policy processes. *Oryx* 42, 491–503.
- Romero, C., Andrade, G.I., 2004. International conservation organizations and the fate of local tropical forest conservation initiatives. *Conbio* 18, 578–580.
- Salafsky, N., Margoluis, R., 2004. Using adaptive management to improve ICDPs. In: McShane, T.O., Wells, M.P. (Eds.), *Getting*

- Biodiversity Projects to Work. Columbia University Press, New York, pp. 372–394.
- Sandker, M., Suwarno, A., Campbell, B., 2007. Will forests remain in the face of oil palm expansion? Simulating change in Malinau, Indonesia. *Ecology and Society* 12, 37.
- Sanjayan, M.A., Shen, S., Jansen, M., 1997. Experiences with integrated-conservation development projects in Asia. Technical Report. World Bank, Washington, DC.
- Sayer, J.A., Wells, M.P., 2004. The pathology of projects. In: McShane, T.O., Wells, M.P. (Eds.), *Getting Biodiversity Projects to Work*. Columbia University Press, New York, pp. 35–48.
- Shepherd, G., 2004. Poverty and forests: sustaining livelihoods in integrated conservation and development. In: McShane, T.O., Wells, M.P. (Eds.), *Getting Biodiversity Projects to Work*. Columbia University Press, New York, pp. 340–371.
- Sunderland, T.C.H., Ehringhaus, C., Campbell, B., 2008. Conservation and development in tropical forest landscapes: a time to face the trade-offs? *Environmental Conservation* 34, 276–279.
- Terborgh, J., 2000. The fate of tropical forests: a matter of stewardship. *Conbio* 14, 1358–1361.
- TNC, 2009. Berau, Indonesia Climate Action Project: Indonesia Turns to its Forests to Lower Carbon Emissions. , [online] URL:<http://www.nature.org/initiatives/climatechange/work/art25992.html>.
- UNFCCC, 2007. In: *Proceedings of UNCCC 2007*, Bali, Indonesia.
- UNFCCC, 2009. In: *Proceedings of the 5th session of the ad hoc working group on long-term cooperative action under the convention*, Bonn, Germany.
- Vidal, J., 2009. Source report: UN forest scheme is invitation to corruption, experts warn: up to \$30bn a year may go to protected forest owners: potential for criminality is vast, says Interpol. *The Guardian*, London.
- Wells, M.P., 2003. Protected area management in the tropics: can we learn from experience? *Journal of Sustainable Forestry* 17, 67–79.
- Wells, M.P., Guggenheim, S., Khan, A., Wardojo, W., Jepson, P., 1999. *Investing in Biodiversity: A Review of Indonesia's Integrated Conservation and Development Projects*. The World Bank, Washington, DC.
- Wells, M.P., McShane, T.O., 2004. Integrating protected area management with local needs and aspirations. *Ambio* 33, 513–519.
- Wells, M.P., McShane, T.O., Dublin, H.T., O'Connor, S., Redford, K.H., 2004. The future of integrated conservation and development projects: building on what works. In: McShane, T.O., Wells, M.P. (Eds.), *Getting Biodiversity Projects to Work*. Columbia University Press, New York, pp. 397–421.
- Wertz-Kanounnikoff, S., Verchot, L.V., Kanninen, M., Murdiyarso, D., 2008. How can we monitor, report and verify carbon emissions from forests? In: Angelsen, A. (Ed.), *Moving Ahead with REDD*. CIFOR, Bogor, pp. 87–98.
- Wunder, S., 2005. *Payments for Environmental Services: Some Nuts and Bolts*, vol. 26. CIFOR, Bogor.
- Wunder, S., 2008. How do we deal with leakage? In: Angelsen, A. (Ed.), *Moving Ahead with REDD*. CIFOR, Bogor, pp. 65–76.
- Zbinden, S., Lee, D., 2005. Paying for environmental services: an analysis of participation in Costa Rica's PSA program. *World Development* 33, 255–272.

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