Contributed Paper

Avoiding Re-Inventing the Wheel in a People-Centered Approach to REDD+

IGNACIA HOLMES* ‡ AND CATHERINE POTVIN*†

*Department of Biology, McGill University, 1205 Doctor Penfield Avenue, Montreal, QC H3A 1B1, Canada
†Smithsonian Tropical Research Institute, Roosevelt Avenue, Tupper Building – 401, Balboa, Ancon, Republic of Panama

Abstract: *One important debate regarding Reducing Emissions from Deforestation and Forest Degradation (REDD+) in developing countries concerns the manner in which its implementation might affect local and indigenous communities. New ways to implement this mechanism without harming the interests of local communities are emerging. To inform this debate, we conducted a qualitative research synthesis to identify best practices (BPs) from people-centered approaches to conservation and rural development, developed indicators of BPs, and invited development practitioners and researchers in the field to assess how the identified BPs are being adopted by community-level REDD+ projects in Latin America. BPs included: local participation in all phases of the project; project supported by a decentralized forest governance framework; project objectives matching community livelihood priorities; project addressing community development needs and expectations; project enhancing stakeholder collaboration and consensus building; project applying an adaptive management approach; and project developing national and local capacities. Most of the BPs were part of the evaluated projects. However, limitations of some of the projects related to decentralized forest governance, matching project objectives with community livelihood priorities, and addressing community development needs. Adaptive management and free and prior informed consent have been largely overlooked. These limitations could be addressed by integrating conservation outcomes and alternative livelihoods into longer-term community development goals, testing nested forest governance approaches in which national policies support local institutions for forest management, gaining a better understanding of the factors that will make REDD+ more acceptable to local communities, and applying an adaptive management approach that allows for social learning and capacity building of relevant stakeholders. Our study provides a framework of BPs and indicators that could be used by stakeholders to improve REDD+ project design, monitoring, and evaluation, which may help reconcile national initiatives and local interests without reinventing the wheel.*

Keywords: best practices, community-based conservation, conservation, forest carbon, REDD+ implementation, rural development

Evitar la Reinvención de la Rueda en un Acercamiento a REDD+ Centrado en Personas

Resumen: *Un debate importante con respecto a Reducir Emisiones de Deforestación y Degradación de Bosque (REDD+) en los países en desarrollo incumbe a la manera en la cual su implementación puede afectar a las comunidades locales e indígenas. Actualmente están emergiendo nuevas formas de implementar este mecanismo sin dañar los intereses de las comunidades locales. Para informar a este debate, llevamos a cabo una síntesis cualitativa de investigaciones para identificar las mejores prácticas a partir de enfoques para la conservación y el desarrollo rural centrados en las personas, desarrollamos indicadores de las mejores prácticas e invitamos a profesionales e investigadores en el área a evaluar cómo las mejores prácticas identificadas están siendo adoptadas por proyectos REDD+ a nivel de comunidad en Latinoamérica. Las mejores prácticas incluyeron la participación local en todas las fases del proyecto, el proyecto es respaldado por un marco de gobernanza forestal descentralizada; los objetivos del proyecto integran las prioridades de los medios de vida de la comunidad, el proyecto aborda las necesidades de desarrollo de la comunidad; el proyecto mejora la colaboración y consenso entre los diversos actores, el proyecto de la aplica un enfoque de manejo*

adaptativo, y el proyecto desarrolla las capacidades nacionales y locales. La mayoría de las mejores prácticas fueron parte de los proyectos evaluados. Sin embargo, encontramos limitaciones de algunos de los proyectos en relación a la gobernanza forestal descentralizada, en integrar los objetivos del proyecto con las prioridades de los medios de vida de la comunidad, y en abordar las necesidades de desarrollo de la comunidad. El manejo adaptativo y el consentimiento libre, previo e informado también han sido altamente ignorados. Estas limitaciones podrían abordarse integrando los resultados esperados de conservación y alternativas a los medios de vida alternativos con los objetivos de desarrollo de la comunidad, ensayando enfoques de gobernanza forestal anidados en que las políticas nacionales apoyen a las instituciones locales para la gestión forestal, comprendiendo mejor los factores que hagan que REDD+ sea más aceptable para las comunidades locales y aplicando un enfoque de manejo adaptativo que permita el aprendizaje social y la creación de capacidades de los actores relevantes. Nuestro estudio proporciona un marco de las mejores prácticas e indicadores que pueden ser utilizados por diversos actores para mejorar el diseño, monitoreo y evaluación de proyectos REDD+; lo que podría ayudar a reconciliar las iniciativas nacionales y los intereses locales sin reinventar la rueda.

Palabras Clave: carbono de bosque, conservación, conservación basada en la comunidad, desarrollo rural, implementación de REDD+

Introduction

In developing countries, large areas of forest occur on local and indigenous communities (hereafter local communities) lands and are essential for the livelihoods of millions of people (Agrawal 2007). Since Reducing Emissions from Deforestation and Forest Degradation in developing countries (REDD+) became an acceptable mitigation option within the United Nations Framework Convention on Climate Change (UNFCCC), a vigorous debate has emerged regarding the possible effects of its implementation on local communities (Agrawal et al. 2011).

Early discussions regarding the effects of REDD+ on local communities stem from civil society's concerns that prioritizing climate change mitigation over poverty alleviation might further marginalize forest-dependent populations because it could impose limits on usage rights and access to forest resources, thereby restricting their livelihoods (Griffiths 2007). Researchers have also suggested that REDD+ could constitute a threat to local communities by creating incentives to centralize forest governance, possibly resulting in unequal benefit sharing of carbon revenues and nationalization of carbon rights (Phelps et al. 2010). Others argue that depending upon its implementation, REDD+ could provide important cobenefits, such as poverty reduction and improved livelihoods (Brown et al. 2008).

UNFCCC has acknowledged the concerns of local communities and adopted safeguards for REDD+ implementation. These safeguards include respecting the knowledge and rights of local communities, allowing for their full and effective participation, and enhancing social and environmental benefits by considering sustainable livelihoods and their reliance on forests (UNFCCC 2011). The implementation of safeguards must address relevant international obligations, including protecting local communities' rights through free and prior informed consent, as mandated by the United Nations Declaration of the Rights of Indigenous peoples and the Universal Declaration of Human Rights (UNFCCC 2011). Implementing such safeguards is an important challenge for REDD+ (Kanowski et al. 2011) because indicators to assess how these safeguards are being implemented have not been developed and the implementation of these safeguards is not mandatory (Chhatre et al. 2012).

REDD+ projects have proliferated, with about 100 being implemented world wide (Cerbu et al. 2011). This has prompted researchers to examine ways of implementing REDD+ while minimizing its potential adverse effects on local communities. Lessons from the implementation of people-centered approaches to conservation are being revisited, including those of integrated conservation and development and community-based forest management (i.e., Agrawal & Angelsen 2009; Brandon & Wells 2009; Blom et al. 2010). Implementation of rural development (RD) projects may also offer important lessons: REDD+ could "[merge] the agendas of environmental conservation and rural development but … [this requires an] improved integration of lessons from past policies and projects concerned with development, resource governance, and conservation into the design of future REDD+ initiative" (Agrawal et al. 2011: 389).

To inform debate on implementing REDD+ in local communities without reinventing the wheel (Agrawal et al. 2011: 390), we considered whether existing best practices (BPs) that stem from people-centered approaches to conservation and rural development could inform REDD+ and whether current REDD+ projects implemented in local communities apply these BPs, and if so, how. Our study provides a possible framework of BPs and indicators that could be used by stakeholders to improve not only REDD+ project design, but also later monitoring and evaluation, which may help reconcile national initiatives and local interests.

Table 1. Documents analyzed in the qualitative research synthesis for identifying best practices from people-centered approaches to conservation and rural development.

Type of article	Body of literature[a]	Number of case studies	References[b]
Theoretical studies	RD	not applicable	Gow & Morss 1988; Tacconi & Tisdell 1992; Ashley & Maxwell 2001
	CBC		Seymour 1994; Western 1994; Berkes 2004; Pretty & Smith 2004; Kaimowitz & Sheil 2007
	ICD		Brown 2002; Garnett et al. 2007
Field work	RD	30	Uphoff et al. 1998
		46	Zoomers 2005
	CBC	1	Thakadu 2005
	ICD	57	Shahbaz et al. 2011
Lessons applied to REDD+	CBC	not applicable	Agrawal & Angelsen 2009; Hayes & Persha 2010; Cronkleton et al. 2011
	ICD		Brandon & Wells 2009; Blom et al. 2010

[a]*Abbreviations: RD, rural development; CBC, community-based conservation; ICD, integrated conservation and development.*
[b]*Citations in Supporting Information.*

Methods

Identifying BPs from the Literature

To identify BPs, we conducted a qualitative research synthesis (QRS) (Major & Savin-Baden 2010) following a meta-ethnography approach for comparative analysis of literature (Noblit & Hare 1988) (details in Supporting Information). We searched documents on BPs when implementing integrated conservation and development, community-based forest management, and rural development projects (hereafter bodies of literature). Selected documents were in English, published after 1980, focused on developing countries, and, where relevant, pertinent to forest conservation. We included peer-reviewed articles, books, book chapters, and gray literature that had been cited in peer-reviewed documents. We qualitatively coded the documents to identify BPs as well as the factors influencing them and their relationships (Dey 1993; Auerbach & Silverstein 2003, coding details in Supporting Information). We reached theoretical saturation (i.e., when additional documents did not improve our understanding of the BPs [Auerbach & Silverstein 2003]) after analyzing 19 documents (Table 1).

To determine if the different source documents concur regarding these BPs, we categorized each document into one of the aforementioned bodies of literature and grouped them into 3 types of documents: theoretical studies, not based on primary fieldwork; fieldwork studies, presenting results from case studies; and lessons applied to REDD+, which described success factors in the context of REDD+.

A contingency table analysis followed by Fisher's exact test (Conover 1980) was conducted to verify whether a body of literature or type of document had an effect on the frequency of mentioning BPs and to identify significant associations amongst them. The relevance of the BPs to REDD+ was established by comparing them with social and environmental principles and criteria that had been developed by the United Nations Collaborative Programme on REDD+ (UN-REDD) (UN-REDD 2012).

Adoption of BPs by Community-Level REDD+ Projects

To determine if REDD+ projects adopted the identified BPs, we created a database synthesizing existing forest carbon project databases (reviewed databases available in Supporting Information). We focused on Latin America and the Caribbean (LAC) because this region has the greatest total area of forest of all developing regions (39%, or 891 million hectare) (FAO 2011) and the largest area of forest under community tenure (Agrawal 2007). Projects in the database included local-scale initiatives that aimed at reducing deforestation and forest degradation, with explicit carbon emission reduction targets estimated relative to a baseline scenario (Caplow et al. 2011).

Sixty-nine REDD+ projects met the aforementioned criteria; 20 were being carried out with available information on project design or implementation (Supporting Information). We classified 9 of these projects as community-level projects, where rural or indigenous communities have customary or statutory tenure or usage rights to the land and the REDD+ project directly targeted these communities. We retained 6 of these projects because 2 were undergoing validation and, thus, the information available was not finalized. The third project did not have sufficient information that was publicly available to assess the identified BPs (Table 2).

To assess how the projects were or were not addressing the identified BPs, we developed an evaluation tool of indicators and respective assessment criteria, created based on the factors identified from the research

Table 2. Overview of community-level REDD+ projects evaluated for best practice adoption.*

Project name	*Project goals*	*Project approach*	*Community details*	*Drivers of deforestation*
The Juma Sustainable Development Reserve Project, Brazil (CCBA [The Climate Community and Biodiversity Alliance] 2008)	halting deforestation and promoting sustainable development through establishing a protected area for sustainable use	strengthen environmental monitoring and control, generate income through sustainable business, community development, scientific research and education and direct payment for environmental services (Bolsa Floresta Program)	About 339 families live in 35 communities and most have no land titles and depend on subsistence and extractive activities; income is below the average minimum wage in Brazil.	increasing rates of agricultural and cattle production and illegal logging and land grabbing
Noel Kempff Mercado Climate Action Project, Bolivia (ConserveOnline 2012)	mitigating carbon dioxide emissions from the atmosphere, preserving biological diversity and promoting sustainable development in local communities	cease legal and illegal logging and expand the boundaries of the park by including the newly indemnified concession area, achieve long-term protection and regeneration of the park expansion area s by working with local communities	The indigenous territory of Bajo Paragua, composed of 4 communities, is located in the project area. The territory did not hold legal title to the land when the project was initiated. Communities practice subsistence agriculture and harvesting of fruits and timber from the forest. They also hunt and fish.	logging, anthropogenic fires for agricultural conversion and slash-and-burn agriculture
Suruí forest carbon project, Brazil CCBA (The Climate Community and Biodiversity Alliance 2011*b*)	halting deforestation and its associated greenhouse gas emissions and to contribute to the preservation of the Paiter Suruí lifestyle and traditions	forest protection, food security and sustainable production, institutional strengthening development and implementation of a financial mechanism–Suruí Fund	The Paiter Suruí indigenous people inhabit the project area. Their territory has legal recognition. They are distributed in 24 villages with about 1231 people. Their traditional livelihood strategies include hunting, fishing, and harvesting forest products. More recently, they began to develop economically productive activities like logging and cattle ranching.	forest conversion for extensive cattle ranching
The Chocó-Darién conservation corridor project, Colombia (CCBA [The Climate Community and Biodiversity Alliance] 2011*a*)	preventing global climate change and safeguard the ecosystems and wildlife of the Darién by strengthening territorial identity and governance capacity of the Council of Afro-Colombian Communities of the Tolo River Basin (Cocomasur)	building governance capacities, reducing carbon emissions and investing in green commodity production	The project is undertaken in the collective lands of COCOMASUR, which received legal recognition for their territory in 2005. The area is managed by the 9 Local Councils of Cocomasur,	conversion of forest to pasture for cattle ranching and to a lesser extent, selective logging

Continued

Table 2. Continued.

Project name	Project goals	Project approach	Community details	Drivers of deforestation
			representing a mix of Afrodescendant and metizo communities from 31 villages (826 families, 5782 people). Most people depend on resources for subsistence including agricultural products, hunting, and fishing.	
Scolel-Té, Mexico (Plan Vivo 2012)	carbon sequestration and emission reduction benefits along with environmental and social cobenefits, including biodiversity maintenance and poverty reduction	assisting farmers developing more sustainable land management and better livelihoods through the provision of carbon services	In 2010 the project involved 2437 direct project participants and about 6400 Mayan and mestizo families from about 25 communities from 8 ethnic indigenous and groups.	Information was not available because it depended on the specific circumstances of each participant.
The Ipetí-Emberá Carbon Project, Panama (Holmes et al. 2012)	increasing carbon stocks and reducing emissions from deforestation while enhancing participation of local communities in sustainable land management decisions	reforestation with native species and agroforestry systems for enhancing carbon stocks and addressing livelihoods and establishing a community patrolling system to reduce deforestation due to invasion	The project is located in the collective land of Ipetí-Emberá, which has no legal title. The population is represented by 71 families (550 people). Of these, 22 families are direct project participants. Primary economic activities include subsistence cultivation, cattle ranching, acting as day laborers, and handicraft production.	conversion of forest to pasture for cattle ranching, slash-and-burn agriculture and land invasions from adjacent colonist population.

*Citations of project documents available in Supporting Information.

synthesis. The tool included 2 types of assessment criteria: ordinal, representing different levels of achievement for a particular indicator and nominal (no order). The tool also had a 5-point, Likert-type items scale (poor, fair, good, very good, and excellent) to rate overall project performance for each BP (evaluation tool in Supporting Information). The evaluation tool was pretested with 5 researchers in the field and modified according to their recommendations.

Using the snowball sampling technique (Patton 1990), we invited development practitioners and researchers working on REDD+ and community-based conservation to evaluate one randomly assigned community-level REDD+ project. This approach was taken to ensure that more than one person was evaluating each project and to increase the rigor of the evaluation of BPs adoption (i.e., triangulation). Survey participants (hereafter respondent) were invited to analyze available project reports (i.e., project design documents) in meeting the identified BPs

and their respective indicators (details in Supporting Information). We sent out 93 invitations, 39 invitees volunteered to participate, and we received 29 completed evaluations.

To analyze ordinal assessment criteria, we used the mode of the sample. We determined associations among the different assessment criteria with contingency table analysis and Goodman–Kruskal's gamma. Responses to the 5-point, Likert-type items scale were treated as ordinal data (poor, lowest value [1]; excellent, highest value [5]). To evaluate whether the overall ratings for each BP varied among the 6 selected REDD+ projects, we performed the exact Kruskal–Wallis test, including multiple pair-wise comparisons when $p < 0.05$ (Conover 1980). For nominal assessment criteria, we also used the mode of the sample, contingency table analysis, and Fisher's exact tests to determine associations between assessment criteria and to determine if the frequencies of the evaluation responses differed among the different projects. We
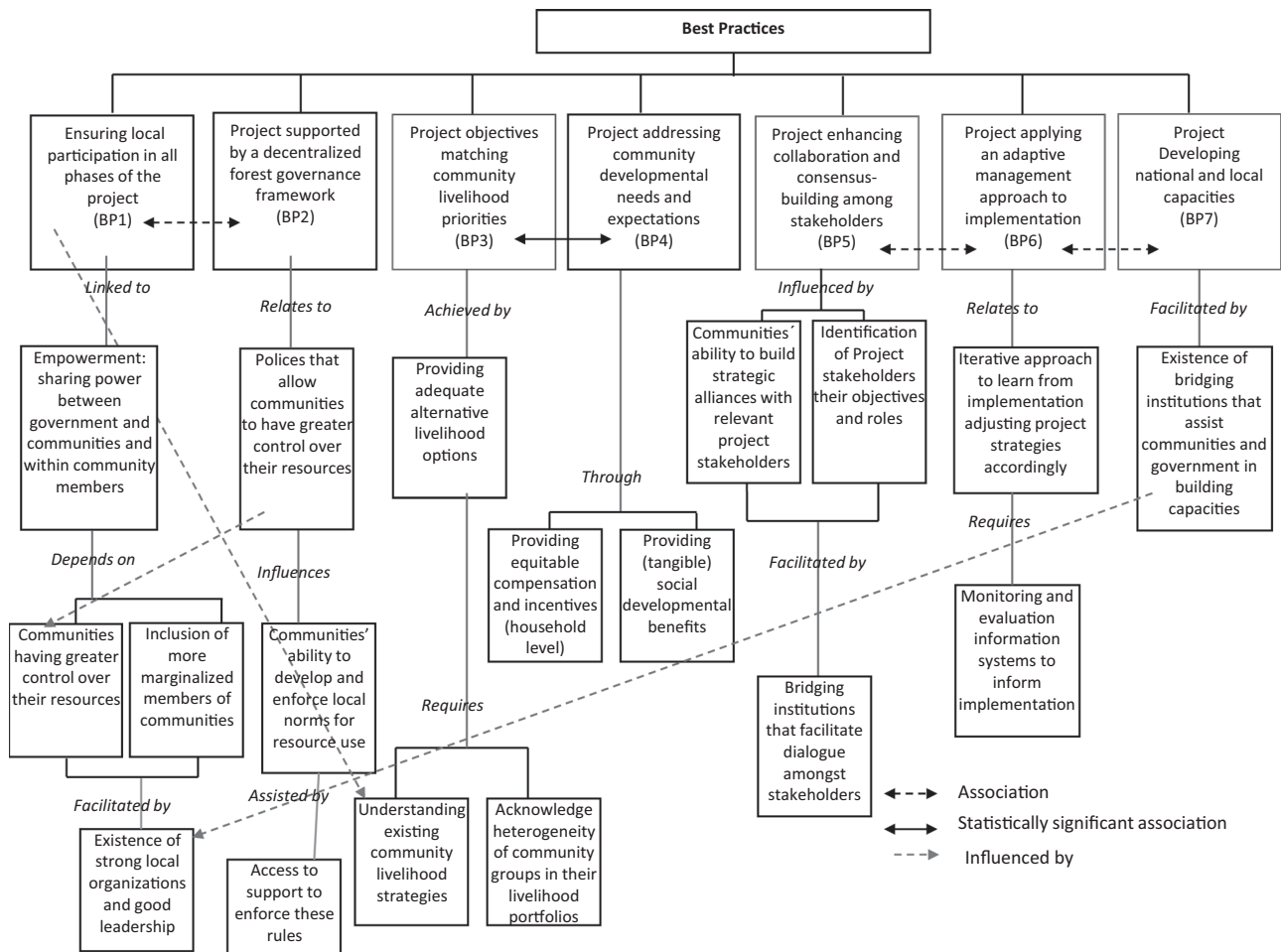
Figure 1. Concept map showing best practices from people-centered approaches to conservation and rural development identified from the literature and substantive relationships among them.

used SAS software to perform all statistical analyses (SAS Institute 2012).

Results

BPs from the Literature

The research synthesis allowed identifying 7 BPs as well as the factors influencing them and their relationships (Fig. 1). We found a broad consensus among the different bodies of literature and the types of documents regarding the identified BPs ($p > 0.05$, Table 3). All identified BPs, except for one, related to one or more UN-REDD social and environmental principles and criteria (Table 4).

Ensuring local participation in all phases of the project (BP1) was mentioned as a BP throughout the 19 analyzed documents. Seventy-nine percent of the documents linked participation to the idea of empowerment that included sharing power among community members, allowing more marginalized individuals to participate in and benefit from projects (47%), and sharing power between governments and communities (73%). The latter articles mentioned that effective decentralization, which allows communities to control their resources, is an essential condition for local participation.

Project supported by a decentralized forest governance framework (i.e., a policy framework that strengthens local rights to use and manage forest resources) (BP2) was prescribed as a BP to achieve positive conservation and livelihood project outcomes (17 of 19 documents). Fifty-three percent of these documents mentioned that successful projects depended on communities developing and enforcing their own institutions, norms, and rules for resource use (Agrawal & Gibson 1999), whereas 41% suggested that communities should have external support to enforce some of these rules (i.e., to control external forest users).

Project objectives matching community livelihood priorities (BP3) was mentioned as a BP in 17 documents and occurred when projects provided adequate livelihood diversification alternatives to local communities (81%). Achieving this BP depended upon understanding local livelihood strategies (75%) and acknowledging

Table 3. Results for contingency table analysis on best practices (BP) from people-centered approaches to conservation and rural development from the literature grouped by body of literature and type of article.[a]

Document group	Ensuring local participation in all phases of the project (BP1) (%)	Project supported by a decentralized forest governance framework (BP2) (%)	Project objectives matching community livelihood priorities (BP3) (%)	Project addressing community development needs and expectations (BP4) (%)	Project enhancing collaboration and consensus building among project stakeholders (BP5) (%)	Project applying an adaptive management approach to implementation (BP6) (%)	Project developing national and local capacities (BP7) (%)
Body of literature							
Rural development (5)[b]	100	80	100	80	80	80	100
Community based conservation (9)	100	89	89	67	100	67	100
Integrated conservation and development (5)	100	100	80	100	80	60	60
Total (19)	100	89	89	79	84	68	89
Exact Fisher's test (p)	c	1.0	1.0	0.53	0.12	1.0	0.117
Type of article							
Theoretical study (10)	100	100	90	90	80	70	100
Field work (4)	100	75	100	100	100	75	75
Lessons to REDD+ (5)	100	80	80	40	80	60	80
Total (19)	100	89	89	79	84	68	89
Exact Fisher's test (p)	c	0.210	1.0	0.068	1.0	1.0	0.210

[a]Values are percentage of documents in the group category that mentioned this best practice.
[b]Number of documents in this group category.
[c]No statistics were computed because this best practice is a constant.

Table 4. Comparison of identified best practices from people-centered approaches to conservation and rural development and UN-REDD social and environmental criteria.

Best practices identified from the literature	UN-REDD social and environmental criteria (UN-REDD 2012)
Ensuring local participation in all phases of the project (BP1)	ensure full and effective participation of relevant stakeholders, in particular, indigenous peoples and other forest dependent communities, with special attention to the most vulnerable and marginalized groups (criterion 4)
	seek free, prior, and informed consent of indigenous peoples and other forest-dependent communities and respect and uphold decision taken (whether consent is given or withheld) (criterion 9)
Project supported by a decentralized forest governance framework (BP2)	respect and promote the recognition and exercise of equitable land tenure and carbon rights by indigenous peoples and other local communities (criterion 7)
Project objectives matching community livelihood priorities (BP3)	respect and protect traditional knowledge and cultural heritage and practices (criterion 11)
	ensure land-use planning for REDD+ explicitly accounts for ecosystem services and biodiversity conservation in relation to local and other stakeholders values and for potential synergies and trade offs between different benefits (criterion 21)
Project addressing community development needs and expectations (BP4)	ensure equitable, nondiscriminatory, and transparent benefit sharing and distribution among relevant stakeholders with special attention to the most vulnerable and marginalized groups (criterion 12)
	protect and enhance economic, social, and political well being of relevant stakeholders, while minimizing adverse effects on well being, with special attention to the most vulnerable and marginalized groups (criterion 13)
	ensure consistency with and contribution to national poverty reduction strategies and other sustainable development goals (including those outlined under the Millennium Development Goals framework), including alignment with ministries and sub-national strategies and plans that may have an impact on, or be affected by, the forest sector or land-use change (criterion 16)
Project enhancing collaboration and consensus building among project stakeholders (BP5)	promote coordination, efficiency, and effectiveness, including cooperation across sectors and in the enforcement of laws (criterion 5)
Project applying an adaptive management approach to implementation (BP6)	
Project developing national and local capacities (BP7)	ensure transparency and accessibility of all information related to REDD+, including active dissemination among relevant stakeholders (criterion 3)

heterogeneity of livelihood portfolios among community groups (56%).

Project addressing community development needs and expectations (BP4) was mentioned as a BP in 15 documents and entailed providing direct benefits (i.e., compensation) at the household level (53%); improving availability of social development services (i.e., health and education) (60%); or adopting a mixed approach that included both compensation and development services (33%). There was a significant association between this BP and BP3-matching livelihood priorities (Fisher's 2-sided test, $p = 0.035$, $n = 19$).

Conservation and rural development projects often involve several stakeholder groups with differing agendas. Thus, enhancing stakeholder collaboration and consensus building among project stakeholders (BP5) was mentioned as a BP in 16 documents. Three factors influenced enhancement of collaboration and consensus building among project stakeholders: ability of communities to build strategic alliances with relevant project stakeholders, including government and nongovernmental organizations (NGOs) (43%), identification of relevant stakeholders and their project roles (31%), and existence of bridging institutions that facilitate coordination and dialogue (44%).

Conservation and rural development projects take place over a long period and under changing social and environmental circumstances. Therefore, application of an adaptive management approach (BP6) was mentioned as a BP in 13 documents. This BP required establishing monitoring and information systems that informed implementation (64%).

Project developing national and local capacities was mentioned in 17 documents and called for building

Table 5. Overall performance of adoption best practice (BP) from people-centered approaches to conservation and rural development by the evaluated REDD+ projects.[a]

REDD+ evaluated project[b]	BP1-participation mode (%)	BP2-decentralized forest governance mode (%)	BP3-matching livelihood priorities mode (%)	BP4-addressing community development needs mode (%)	BP5-stakeholders collaboration mode (%)	BP6-adaptive management mode (%)	BP7-enhanced capacities mode (%)
A (5)	VG (40)	G (60)	VG (60)	G (50)[c]	VG (60)	VG (40)	VG (40)[c]
B (5)	E (40)[c]	VG (33)[c]	VG (80)	VG (40)[c]	VG (50)	VG (40)	VG (80)
C (5)	F (60)	F (60)	G (40)	F (60)	P (60)	G (40)	G (40)
D (4)	VG (75)	E (50)[c]	G (75)	G (75)	VG (50)	VG (50)	E (75)
E (5)	G (60)	VG (50)	VG (80)	E (67)	VG (50)[c]	E (60)	E (75)
F (5)	VG (80)	E (33)[c]	VG (100)	E (33)[c]	F (60)	VG (40)	VG (50)
Overall (29)	VG (41)	G (36)	VG (60)	G (38)	VG (32)	VG (37)	VG (42)
Kruskal–Wallis p	0.0036[d]	0.3285	0.6417	0.0583	0.0028[c]	0.0250[c]	0.0016[c]

[a]*Best practices more fully defined in Table 4. Abbreviations: P, poor; F, fair; G, good; VG, very good; E, excellent.*
[b]*The main purpose of the analysis was not to determine which projects were doing well or not; rather, it was to gain a general idea of how best practices are being adopted by the evaluated REDD+ projects. Therefore, we randomly assigned a letter code to each project to maintain their anonymity in the evaluation. Number in parentheses is the total number of evaluators that assessed best practices adoption (i.e., number of respondents per project).*
[c]*Multiple modes exist. The highest value is shown (details in Supporting Information).*
[d]*Significance: p < 0.05.*

project stakeholders' knowledge and management abilities. Building capacity of local people was mentioned in all documents, whereas 31% also noted the importance of building government capacities.

Adoption of BPs in REDD+ Project Implementation

Most BPs received overall ratings of very good and good (5 and 2 BPs, respectively; Table 5). A single project received the lowest rating poor for 1 of the BPs, whereas 3 BPs were rated as excellent in at least 1 project. Kruskal–Wallis tests indicated significant differences among projects in terms of their overall ratings for 4 BPs (details in Supporting Information).

Respondents reported assessment criteria for BP1-participation in project design and in implementing decision making, which denoted a high degree of participation (Fig. 2). Three projects addressed local empowerment by allowing more marginalized community members to participate in the project. Survey respondents mentioned that the project reports provided evidence that resources were committed to community participation in project design (62%) and implementation of decision making (65%).

With regard to BP2-decentralized forest governance, 3 projects were implemented in areas where communities held statutory rights to land. Two projects were in the process of obtaining their statutory tenure rights, but projects were not assisting communities in resolving their tenure rights (gamma = 0.438, p = 0.362, n = 15). We tested the link, identified from the research synthesis, between this BP and BP1-participation, and found a significant positive association. Projects with higher scores for overall participation were in communities that had statutory rights to land (gamma = 0.689, p = 0.0001, n = 29).

We also tested if land tenure was associated with communities holding carbon ownership and receiving carbon benefits. Nearly half the respondents (47%) indicated that the project reports did not provide information about community carbon ownership. Another 7% reported that local communities did not hold carbon ownership. Two projects indicated that communities held 100% carbon ownership. Respondents (55%) likewise indicated that no information was available on carbon benefit sharing; 2 projects allocated 100% of the project's carbon revenues to the communities. There was no statistically significant association between land tenure (excluding responses of "information not available" and blank responses) and either carbon ownership (gamma = 0.676, p = 0.097, n = 15) or carbon-benefit sharing (gamma = 0.111, p = 0.776, n = 12).

The objectives of all projects mentioned local livelihoods that promoted alternative livelihoods (BP3-matching livelihood priorities). Only 2 projects involved the participation of communities in deciding these alternatives. The research synthesis indicated an association between this BP and BP4-addressing community development needs. However, results from the REDD+ project evaluations failed to find a significant association between the overall ratings for these 2 BPs (gamma = 0.366, p = 0.179, n = 24).

With regard to BP4-addressing community developmental needs, respondents noted that limited information was available about developmental services supported by the projects, with health, education, and communication services being the most widely cited. Three projects reported helping communities in accessing these 3 services. Similarly, respondents reported there was very limited information on project incentives (45% of valid responses; 54% reported information was not available).
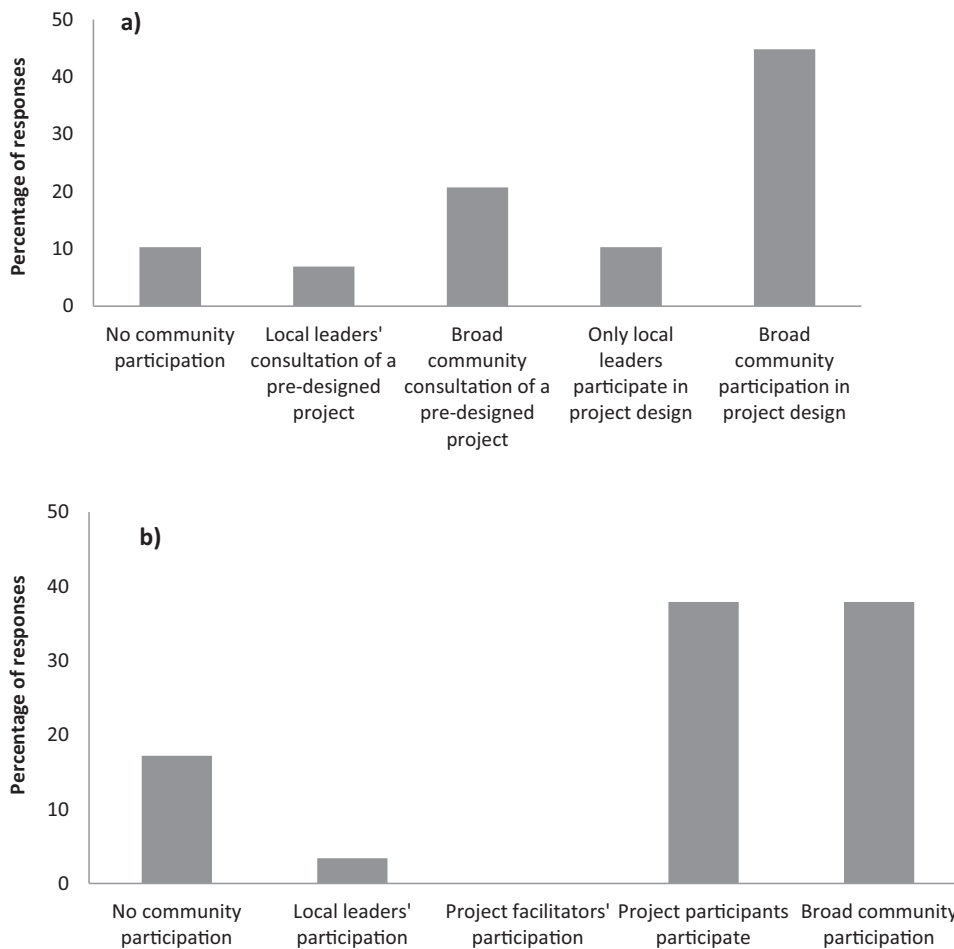
Figure 2. Results of the assessment of adoption of best practice 1 (BP1-participation) by REDD+ projects in (a) project design and (b) project implementation.

Nearly half of these responses (48%) reported that project participants received cash incentives, whereas 52% received noncash incentives.

With regard to BP5-stakeholder collaboration, on average projects had 5.83 stakeholders. Communities established more partnerships with local NGOs and other communities than with carbon market actors and governments. There were no statistically significant associations between reported partnerships and the effective representation of communities within these partnerships (see Supporting Information).

All projects addressed BP6-adaptive management. Most of them had systems to monitor socioeconomic and carbon variables (83% and 100% of the projects, respectively), but only half had monitoring systems for biodiversity. Local communities participated in these monitoring schemes in 4 projects.

All project addressed BP7-enhanced capacities. Project reports mentioned capacity-building activities targeting local community participants and included training in leadership development, conservation practices, alternative livelihood diversification, and project administration and management. There was no mention of projects addressing capacity building at the government level.

Discussion

Livelihoods and Development Needs

Concerns for the long-term success of REDD+ projects have led to the idea that promoting alternative livelihood strategies would successfully reduce emissions from deforestation and degradation and increase carbon stocks (Aukland et al. 2003). All of the evaluated REDD+ projects mentioned providing alternative livelihood strategies, as proposed by BP3-matching livelihood priorities, but local communities mostly have not been involved in choosing or designing these strategies. This approach, therefore, suffers from some limitations, including a lack of understanding of the various factors that shape local livelihoods strategies (Coomes et al. 2004) and a lack of involvement of local people in determining links between resources and proposed alternatives (Salafsky & Wollenberg 2000).

Another important result of our study is that the REDD+ project survey failed to unveil links between BP3-matching livelihood priorities and BP4-addressing community development needs. For example, projects have provided only limited support for improving developmental services to local communities. For

forest-dependent communities, the forest provides food, shelter, and medicine, so all projects should ensure that people continue to have access to these benefits (Kaimowitz & Sheil 2007). This could be realized by integrating desired conservation outcomes and alternative livelihoods into longer term community development goals, which could be done by using development means toward conservation ends (Salafsky 2011). This approach is particularly appropriate when threats to natural resources are related to unsustainable resource use (Salafsky 2011); therefore, this is a relevant approach for REDD+ implementation.

The aforementioned approach would require a better understanding of the links between the human and ecological benefits expected from conservation interventions (Salafsky 2011). Sustainable livelihood approaches (SLAs) (Ellis & Biggs 2001) might offer a way to understand the links between development needs and forest conservation in the context of REDD+ implementation. SLAs emerged in the late 1990s and have become very popular among several development agencies, including those associated with the United Nations. Despite their popularity, such approaches have not been well addressed in debates on designing REDD+ interventions with local communities. Given that SLAs have been extensively applied, several lessons could be drawn that would guide the planning of REDD+ local interventions. For one, improved selection of on-the-ground activities and better targeting of interventions would be facilitated according to local circumstances (Coomes et al. 2004). These actions may assist in matching development needs, local livelihoods, and forest conservation.

Forest Governance

REDD+ has been conceived as a national-level mechanism. Undertakings at this scale are believed to reduce leakage, ensure permanence, and provide accurate monitoring, reporting, and verification (Angelsen et al. 2008). Some, though, have noted that REDD+ makes national governments the principal forest stakeholders and that this position could be detrimental for encouraging decentralized forest management (i.e., it would provide incentives for recentralization of forest governance) (Phelps et al. 2010). Studies have shown that local communities have an important role in forest conservation (Agrawal & Chhatre 2006; Stocks et al. 2007) and that decentralization that includes greater community rule-making authority (local institutions) is associated with positive carbon storage and favorable livelihood outcomes (Agrawal & Chhatre 2006).

Discussions on forest governance for REDD+ have emphasized the need to clarify forest tenure (Streck 2009; Sunderlin et al. 2009) (i.e., to determine who is allowed to use forest resources, for how long, and under what conditions [Larson et al. 2010]). Uncertain tenure facilitates deforestation (Geist & Lambin 2002), whereas clear forest tenure facilitates compensation and distribution of incentives for forest management (Streck 2009). In assessing BP2-decentralized forest governance, our study revealed a gap between the claims of resolving tenure for REDD+ and the reality of REDD+ projects on the ground. Half the evaluated projects were undertaken where communities had statutory land tenure. Yet, tenure does not guarantee carbon ownership or access to carbon benefit sharing. Other studies have also shown that decentralization might not benefit communities if it comes with restrictions upon the use of forest resources and their management (Larson et al. 2010). Therefore, we support claims that ownership rights alone are meaningless if communities do not have ability to devise and enforce local institutions that would allow them to benefit from decentralization processes (Agrawal & Chhatre 2006).

Successful REDD+ implementation entails nurturing changes at the local level. Consequently, there is a need to determine decision-making processes that enable forest rights at multiple scales. Including exploring effective decentralization mechanisms that allow local communities to control their forests and have rights to use and benefit from these resources. Furthermore, these processes should support collective action toward building resilient, transparent, and accountable local institutions (Ostrom 1990; Agrawal & Chhatre 2006). This form of implementation will require a change in forest governance, particularly in terms of local stakeholder inclusion in national decision-making processes, together with recognizing forest rights and institutions at various scales (Sikor et al. 2010). In this sense, our research supports claims for the need to test approaches to forest governance in which national policies support local institutions for forest management (i.e., nested governance) (Hayes & Persha 2010; Sikor et al. 2010).

Participation

Our QRS showed that BP1-participation was a key element for project success. Interestingly, the literature we reviewed seemed to overlook a crucial step in the community engagement process: project approval. All of the factors influencing BP1 considered issues to be addressed once projects had been accepted by communities. Yet, we could not find any publications that addressed factors influencing the adoption or rejection of projects by communities. Projects that empower people to manage their own resources need to be initially accepted by the communities so they can make their own decisions about the processes and activities that affect their lives (Michener 1998). This missing fundamental step is therefore linked with free and prior informed consent (FPIC), which is key for REDD+ implementation.

Our study showed that community-level REDD+ projects generally addressed BP1-participation in their project reports very well. This result contrasts with an important controversy on how national-level REDD+ readiness processes (i.e., processes by which countries are preparing their REDD+ strategy) (assisted by UN-REDD and the Forest Carbon Partnership Facility of the World Bank) are addressing local participation and FPIC. The national coordinator of Indigenous Peoples in Panama (COONAPIP), the Civic Council of Popular and Indigenous Organisations (COPINH) of Honduras, and the Salvadoran National Indigenous Coordinating Council (CCNIS) have rejected the REDD+ readiness process in their respective countries, claiming that safeguards have not been respected and that indigenous communities and traditional authorities have not participated effectively in these processes (REDD Monitor 2012; Potvin & Mateo-Vega 2013).

Divergent reaction to REDD+ could be related to the lack of information available regarding project participants' perceptions of participation processes (Booth & Halseth 2011). If REDD+ is to be implemented in a genuinely people-centered approach, then there is an urgent need to make case studies available that assess how REDD+ initiatives address the full and effective participation of local communities and how these initiatives put FPIC into operation. In people-centered approaches, local communities build their capacities to manage their resources and make informed choices about the issues that affect their lives. Including community assessment of participatory measures would allow broadening the meaning of participation and, thus, complete the wheel. Further, inclusion of this process would contribute to a better understanding of the factors that will make REDD+ more acceptable to local communities and, ultimately, would assist in reconciling national initiatives and local interests.

Adaptive Management, Collaboration, and Capacities

Adaptive management entails managing natural resources while simultaneously learning about both the resources themselves and the implemented management strategies (Williams 2011). This approach recognizes that ecosystems do not respond linearly to management and use and that natural systems are interconnected with social-ecological systems (Berkes et al. 1998). Surprisingly, we found that BP6-adaptive management was largely overlooked in REDD+ debates, particularly from a donor's perspective. None of the UN-REDD social and environmental principles or criteria addresses this BP.

Yet, there are many reasons to favor undertaking an adaptive management approach during REDD+ implementation. Adaptive management is well suited to situations when variation in environmental conditions, re-

sources of interest, and management impacts are unpredictable (Williams 2011). Such uncertainties are inherent in REDD+ projects. Adaptive management could therefore contribute to REDD+ development and implementation at any given scale.

Implementing REDD+ using an adaptive management approach would strengthen 2 other BPs (BP6-stakeholder collaboration and BP7-increased capacities). In defining social learning as "an intentional process of collective self-reflection through interaction and dialogue among diverse participants (stakeholders)," Fernandez-Gimenez et al. (2008: 3) emphasized the links between adaptive management and social learning. If adaptive management enhances collaboration among project stakeholders (Berkes 2004; Fernandez-Gimenez et al. 2008), then it would help in adopting BP6.

Adaptive management could also assist in addressing BP7-increased capacities. The REDD+ mechanism has been designed in 3 phases, based on the premise that this would allow REDD+ countries to build their capacities while advancing through the different phases. REDD+ is often carried out by national agencies, which frequently face weak institutional capacities (Davis et al. 2009). Several countries are subsequently receiving funds to build their capacities to put the needed REDD+ apparatus into place. Therefore, it is important to better define effective and ethical development assistance for REDD+ aimed at ensuring that these capacities are successfully built in developing countries (Gow 1991). To achieve this, there is a need to better understand how REDD+ fits into the existing priorities of developing countries and what is (or is not) already in place to fulfill these priorities; understand the structural problems that lead to deforestation; and recognize that developing nations should be able to take an active role in their own development rather than acting passively only as aid recipients (Crocker 2008). This approach applies equally at different scales, from national agencies to local communities.

From Design and Implementation to Monitoring and Evaluation

Surprisingly, there was a lack of information on monitoring and evaluation. Fifty percent of the projects were validated by an external certifier, but their validation reports did not provide enough information to assess if projects had adopted the identified BPs. This information gap has also been highlighted by other studies which mention that available documentation does not provide systematic information about local communities and that credible counterfactual scenarios, particularly socioeconomic ones, are often vague or nonexistent (Caplow et al. 2011; Lawlor et al. 2013). This in itself raises concerns regarding the possibility of monitoring the implementation of REDD+ projects.

We propose that the BPs and their respective indicators identified in this study provide a possible framework to develop effective monitoring of the impact of REDD+ interventions. This framework could be used and adapted by various stakeholders for adopting a people-centered approach to REDD+. Local communities could use this framework as a checklist of BPs for designing, implementing, and monitoring projects on their lands. Further, project developers, managers, and certifiers could use this checklist to assess the adequacy of project design. In the long term, this checklist could also be used for project monitoring and evaluation that allows assessment of what works or what does not work to adapt the project or program strategy for reaching the expected outcomes (adaptive management). These measures will contribute to the long-term sustainability of REDD+ initiatives and we hope help reconcile national initiatives and local interests without reinventing the wheel.

Acknowledgments

Supporting Information

An extensive methods section (Appendix S1), reviewed REDD+ project databases, articles included in the metaethnography and project documents (Appendix S2), REDD+ project evaluation tool (Appendix S3), details about evaluation approach (Appendix S4), and results tables (Appendix S5) are available online. The authors are solely responsible for the content and functionality of these materials. Queries (other than absence of the material) should be directed to the corresponding author.

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