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An Assessment Framework for Benefit Sharing Mechanisms to Reduce Emissions from Deforestation and Forest Degradation within a Forest Policy Mix

Grace Yee Wong,[1,2*] Lasse Loft,[3] Maria Brockhaus,[4] Anastasia Lucy Yang,[5] Thu Thuy Pham,[6] Samuel Assembe-Mvondo[7] and Cecilia Luttrell[2]

[1]*Stockholm Resilience Centre, Stockholm University, Stockholm, Sweden*
[2]*Center for International Forestry Research (CIFOR), Jalan CIFOR, Situ Gede, Bogor Barat Indonesia*
[3]*Leibnitz Centre for Agricultural Landscape Research (ZALF), Institut für Sozioökonomie, Müncheberg, Germany*
[4]*University of Helsinki, Helsinki, Finland*
[5]*Thünen Institute of International Forestry and Forest Economics, Hamburg, Germany*
[6]*Center for International Forestry Research (CIFOR), Trung Hoa Ward, Cau Giay District, Hanoi, Vietnam*
[7]*Center for International Forestry Research (CIFOR), C/O IITA Humid Forest Ecoregional Center, Yaounde, Cameroon*

ABSTRACT

Policy instruments for implementing the Reducing Emissions from Deforestation and Forest Degradation and the enhancement of forest carbon stocks (REDD+) mechanism operate within an orchestra of policy mixes that affect the forest and other land sectors. How will policymakers choose between the myriad of options for distributing REDD+ benefits, and be able to evaluate its potential effectiveness, efficiency and equity (3Es)? This is a pressing issue given the results-based aspect of REDD+. We present here a three-element assessment framework for evaluating the outcomes and performance of REDD+ benefit sharing mechanisms, using the criteria of effectiveness, efficiency and equity: (1) the structures (objective and policies) of a REDD+ benefit sharing mechanism; (2) the broader institutional and policy contexts underlying forest governance; (3) outcomes of REDD+ including emission reductions, ecosystem service provision and poverty alleviation. A strength of the assessment framework is its flexible design to incorporate indicators relevant to different contexts; this helps to generate a shared working understanding of what is to be evaluated in the different REDD+ benefit sharing mechanisms (BSMs) across complex socio-political contexts. In applying the framework to case studies, the assessment highlights trade-offs among the 3Es, and the need to better manage access to information, monitoring and evaluation, consideration of local perceptions of equity and inclusive decisionmaking processes. The framework does not aim to simplify complexity, but rather serves to identify actionable ways forward towards a more efficient, effective and equitable implementation and re-evaluation of REDD+ BSMs as part of reflexive policymaking. Copyright © 2017 John Wiley & Sons, Ltd and ERP Environment

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*Correspondence to: Grace Yee Wong, Stockholm Resilience Centre Stockholm University Kräftriket 2B, Stockholm 106 91 Sweden.
E-mail: grace.wong@su.se

Introduction

THE RULES FOR REDUCING EMISSIONS FROM DEFORESTATION AND FOREST DEGRADATION (REDD+) WERE SET AT THE BONN CONFERENCE in June 2015, and the Paris Agreement that emerged from the 21st Conference of the Parties in December 2015[1] has renewed the momentum for climate finance and affirmed REDD+ as a results-based payment mechanism. These are positive signals as countries continue to implement variations of REDD+ at national or sub-national levels. Over the past years of REDD+ readiness activities, it has become apparent that REDD+ policy implementation will consist of a mix of various policy instruments aiming at tackling the drivers of deforestation and forest degradation. Within this orchestra of instruments, there are those that aim to (i) change enabling conditions such as the definition and allocation of property rights or restructuring of ministries' responsibilities, (ii) introduce incentive-based policy instruments, such as payments for ecosystem services schemes, and (iii) implement disincentive policies such as tightening and stronger enforcement of direct regulation.

REDD+ incentives are designed to influence forest and land use behavior to reduce deforestation and forest degradation by changing the relative values of economic costs and benefits from forest use (Börner and Vosti, 2013). Among the most pressing challenges of national scale REDD+ implementation is the question of benefit sharing, i.e. how monetary and non-monetary incentives, generated through the implementation of REDD+ policies and projects at different governance levels (national, subnational and local), be distributed in an effective, efficient and equitable manner (Luttrell *et al.*, 2013; Pham *et al.*, 2013). As such, countries will have to tackle questions such as 'how will the REDD+ incentives be determined across the different target groups?', 'what are the instruments to be used for distribution?' and 'how will the flow of incentives be monitored and performance measured?'.

Decisionmakers have choices to make between options for the design of a benefit sharing mechanism (BSM) for REDD+. How will they choose between the myriad of options for sharing or distributing REDD+ benefits, and be able to evaluate its potential effectiveness, efficiency and equity (3E) and the potential trade-offs between them? This is especially so with the various institutional means, structures and policy instruments within which such a REDD+ benefit sharing mechanism is situated. Specific contextual conditions and existing policies add complexity to understanding how a BSM can be designed to support the desired REDD+ outcomes.

The aim of this paper is to provide guidance to countries through an assessment framework and possible indicators that can be applied to assess the effectiveness, efficiency and equity implications of a particular BSM design. The purpose of the framework is to allow for a more systematic evaluation of the outcomes of a BSM and an assessment of its performance to feed back into improving its design as part of policy learning and adaptation. This paper first presents the structural flow of the assessment framework, followed by theoretical considerations of the effectiveness, efficiency and equity criteria, and then elaborates on how the framework can be translated into country and case specific indicators which we draw from an analysis of case studies. By building on the case studies, we highlight two particular aspects of the proposed framework: (i) its application as a tool to generate a common understanding for evaluating different REDD+ BSMs across complex socio-political contexts where policies, measures and institutional structures are changing at the same time, and (ii) the flexibility of the design elements in the framework to capture both socio-economic and governance aspects.

Conceptual Framework

Benefit Sharing Mechanisms in a Policy mix for REDD+

The design of a benefit sharing mechanism is ideally based upon a set of predefined objectives. In the case of REDD+, primary objectives would be to reduce deforestation and forest degradation and to increase forest restoration, and many REDD+ countries often have additional objectives such as to alleviate poverty and foster rural economic development. It is important to identify these policy objectives upfront as they form the benchmark for the assessment and because of the multiplicity of different objectives can lead to inevitable trade-offs.

[1]https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf

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We divide the assessment of a REDD+ BSM into three elements or components, acknowledging that in the reality of policymaking these elements often overlap and are intertwined. However, for the sake of analysis, we divide the assessment into three elements, involving (1) the design of a REDD+ benefit sharing policy instrument to meet its stated objectives, (2) existing and potential changes in the institutional and policy context factors underlying REDD+ and the BSM and (3) the outcomes of the REDD+ policy mix including emission reductions, poverty alleviation and economic development (see Figure 1). The different elements are discussed further in the following paragraphs.

In the first assessment element, we examine REDD+ BSMs as a performance-based policy instrument.[2] The aim of *positive incentive-based policy instruments* is to influence human behavior by providing benefits as a conditional reward for an activity or outcome as defined by the specific policy objectives (Börner and Vosti, 2013). REDD+ BSM can target land stewards directly through the distribution of incentives to motivate towards a change in behavior away from deforestation or forest degrading activities or towards forest restoration, similar in principle to Payment for Environmental Services (PES) schemes (Vatn, 2015; Wunder, 2015). A BSM can also target lower-level administrations in decentralized governments by providing incentives through intergovernmental fiscal transfers. A subset of these intergovernmental fiscal transfers is linked to environmental performance, so-called 'ecological fiscal transfers'. Ecological fiscal transfers have been implemented in Brazil and Portugal for biodiversity and forest conservation objectives (May *et al.*, 2002; Schröter-Schlaack *et al.*, 2014), and are now also being considered as a possible instrument for REDD+ (Mumbunan *et al.*, 2012; Irawan *et al.*, 2014). Ideally, the intergovernmental fiscal transfers contribute to changing the behavior of local government policymaking by compensating for the costs of, or rewarding, forest conservation and sustainable forest management policies and activities. In Case Study 1, we examined the forest and land revenue redistribution policy instruments in Cameroon to assess its functionality in transferring revenues to the local level.

In the second assessment element, REDD+ incentives influence the motivations and behavior change of land stewards and policymakers at different levels of government through mediating *institutional and policy context factors* such as institutional capacities and responsibilities at different government levels or existing property rights regimes. A REDD+ policy or intervention may be accompanied by changing institutional and policy context factors, for example through capacity building and the rearrangement of institutional responsibilities, or the definition and enforcement of property rights. Thus, a policy mix for REDD+ BSM might include administrative measures and command and control regulation. Administrative measures may aim at establishing or changing responsibilities and capabilities between different ministries or agencies at the same governance level. An example is the establishment of the world's first ministerial-level REDD+ Agency in Indonesia in 2013 to act as a coordinating and implementing body on REDD+, which was dissolved merely 2 years later (under Indonesian Presidential Decree 16/2015) to be integrated within a consolidated Ministry of Environment and Forestry in 2015 as part of a government restructuring. Similarly, vertical governance responsibilities and capabilities between different governance levels from national to local may be (re)arranged, often in connection with decentralization processes. Case Study 2, on the Forest Land Allocation (FLA) policy in Vietnam, examined how the decentralization of forest rights and management also come with costs and burdens that affect the implementation of future policy instruments. Direct command and control regulation and enforcement may be needed, for example for the definition of new property rights such as carbon rights (Loft *et al.*, 2015) or the enforcement of land use regulations. In the case of the latter, the decline of deforestation rates in the Brazilian Amazon from 27 000 km^2 in 2004 to less than 5000 km^2 in 2012 is largely attributed to changes in the Brazilian law enforcement strategy and related governance systems (Assunção and Monteiro, 2012; Hargrave and Kis-Katos, 2013).

In the third assessment element, REDD+ policy outcomes can also be affected by other sectoral or cross-sectoral policies such as agricultural development subsidies or low emission development strategy. These different policies provide different signals and have indirect effects on the motivation and behavior of land stewards and administration at subnational governance levels towards the REDD+ policy outcomes. These effects have to be taken into account in the design and assessment of a REDD+ BSM. These *conditioning factors*, socio-political, cultural economic and environmental influences of behavior change, are an important piece of the puzzle in assessing how targeted beneficiaries interpret and respond to a REDD+ BSM policy instrument. In Case Study 3, we examined how the

[2]Here we follow Huppes (2001) and define policy instruments as structured activities aimed at changing other activities or behavior in society towards predefined objectives.

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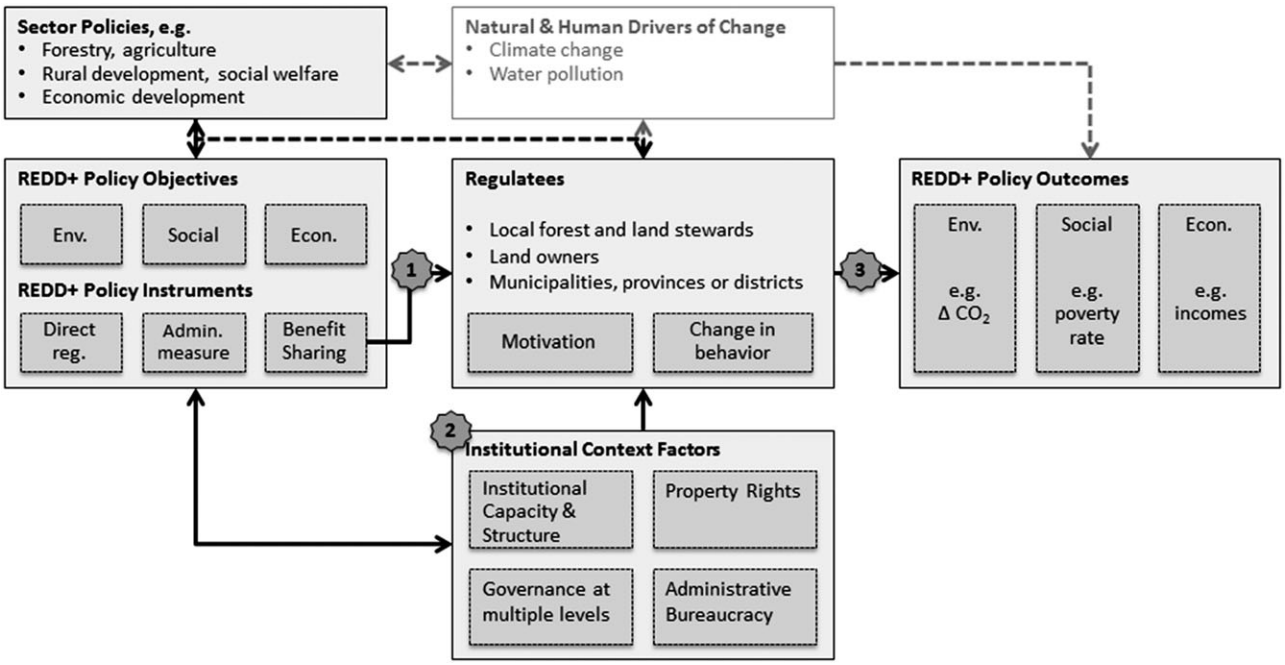

Figure 1. Conceptual framework for assessing REDD+ benefit sharing mechanisms

BSM of a national PES program in Vietnam is perceived by local beneficiaries through the lens of local equity concerns, and how this affects their motivations and forest and land use behavior towards policy outcomes.

Performance Assessment Criteria

We evaluate REDD+ benefit sharing as a policy instrument by using a predefined set of policy evaluation criteria relating to effectiveness, efficiency and equity. We disentangle the criteria to evaluate performance in each of the three assessment elements of the framework and adapted indicators that are relevant to the specific assessment element and to the context (see Table 1 for how we have adapted the 3E criteria in our assessment and other tables in later sections of the paper for the specific indicators applied to our case studies). In so doing, we provide a framework that can be useful for evaluating the functioning of a BSM and for identifying solutions to address limitations and barriers in the different elements.

Equity is increasingly recognized as a key factor in achieving REDD+ or PES outcomes (Sommerville *et al.*, 2010; Pascual *et al.*, 2014). However, while indicators for the evaluation of effectiveness and efficiency can be more easily identified and agreed upon, equity is inherently relativistic (Ituarte-Lima *et al.*, 2014), as equity perceptions are not universal but rather depend on the specific context in which decisions about the distribution of resources are made, and the perceptions of the 'subjects of equity' or affected stakeholders (Konow, 2003; Schokkaert and Devooght, 2003; Muradian *et al.*, 2010; Ituarte-Lima *et al.*, 2014). An assessment of equity will always be an expression of fairness perceptions of different stakeholders and reflect, in part, on the distributions of wealth, power and access to resources within the society. The fairness perceptions can nonetheless be categorized along a set of normative fairness principles and evaluated in the implementation of the REDD+ policy or intervention. Examples of such normative fairness principles are needs-based, merit-based or egalitarian distribution (Pascual *et al.*, 2010; Luttrell *et al.*, 2013). While the links between equity and efficiency/effectiveness are still contested (Halpern *et al.*, 2013), and also beyond the scope of this paper, lessons from PES and conservation practice suggest that equity can have significant positive feedback on program outcomes and legitimacy over the longer term (Gross-Camp *et al.*, 2012; Pascual *et al.*, 2014). At the same time, proper consideration, and prioritization of the different aspects, of equity in the design, planning and implementation of a REDD+ scheme will likely incur higher costs and increase complexity. How will

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Evaluation criterion	Definition	Adaptation to assessing policy instrument design (Case Study 1)	Adaptation to assessing institutional and policy context (Case Study 2)	Adaptation to assessing motivations for behavior change (Case Study 3)
Effectiveness	Relates to the impacts or performance of the policy instrument. Measures the impact of, or degree of a change in behavior induced by, the instrument to a defined policy objective (Ring and Schröter-Schlaack, 2011; Lindhjem *et al.*, 2010; OECD, 2007, 1997).	Relates to policy instrument's performance in delivering incentives to the targeted beneficiaries within reasonable time.	Relates to how change of institutional and policy factors enables/supports implementation of the policy instrument.	Relates to policy instrument's performance in terms of motivating behavior change of local beneficiaries, and on marginal outcomes gained relative to alternative instruments.
Efficiency	Relates to the extent to which an instrument enables a cost-effective achievement of policy objectives, in terms of administrative and implementation costs (Ring and Schröter-Schlaack, 2011; OECD, 2007; Turner and Opschoor, 1994).	Relates to policy instrument's performance in delivering incentives to the targeted beneficiaries in terms of costs related to implementation and bureaucracy, and time.	Relates to change of institutional and policy factors in terms of costs and time to implement.	Relates to the implementation and management costs of achieving local behavior change.
Equity	Divided into three dimensions: (1) distributive equity refers to the allocation of outcomes and their impacts on different stakeholders in terms of costs, risks, and benefits; (2) procedural equity refers to participation in decisionmaking and legitimacy of process; (3) contextual equity or equity of access relates how different actors are able to engage and participate due to existing capabilities and external factors (information, communication, knowledge) (McDermott *et al.*, 2012; Vatn *et al.*, 2011; Pascual *et al.*, 2010; Corbera *et al.*, 2007; Brown and Corbera, 2003).	Relates to (1) distribution to recognized and targeted beneficiaries based on agreed fairness criteria; (2) participation in decisions on policy instrument design; (3) equity of access where all potential stakeholders have capacity to engage.	Relates to (1) distributional effects of responsibilities, costs and benefits; and (2) participation and agreement of relevant stakeholders on fairness criteria, in the process of implementing change in institutional and policy factors.	Relates to (1) the distribution of incentives, costs and risks across local population – based on agreed fairness criteria; (2) participation in decisionmaking process and access to information; (3) freedom in decisions on use of benefits.

Table 1. Definition of 3E evaluation criteria and adaptation to assessment elements in the framework

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REDD+ as a results-based payment scheme balance between these demands? This dichotomy will be further discussed when examining the results of the case studies.

From Concept to Application: Assessing BSM Structure, Context and Outcome

In this section, we illustrate how the three elements of the framework in Figure 1 (1, design of a REDD+ benefit sharing mechanism (objectives and policy instrument); 2, institutional and policy contexts; 3, underlying motivations to achieve outcomes) can be measured with verifiable indicators. We first briefly describe the rationale and general characteristics, and use case studies to illustrate each element of the framework in the sub-sections below. The first case study examines a national policy instrument or benefit sharing mechanism for the redistribution of forest and wildlife revenues in Cameroon to identify the structures and administrative measures for how revenues are delivered to the identified beneficiaries. The second case study examines institutional and policy contexts in the decentralization of rights to local communities through the national FLA (FLA) program in Vietnam, and assesses the multi-level governance practices within this decentralized system and its impact on forest BSMs. The third case study examines the impacts of an incentive for forest conservation in the national Payment for Forest Ecosystem Services (PFES) scheme in Vietnam on local beneficiaries, and in particular assesses the local communities' perceptions of equity and their motivation to protect and manage forests to achieve the PFES policy outcomes.

The first two case studies correspond to Elements 1 and 2 of the assessment framework and the third case study assesses local motivations as an important step to achieving outcomes. All three case studies are part of a portfolio of studies carried out under the CIFOR REDD+ benefit sharing project.[3] Given the absence of full REDD+ implementation in any country, the case studies are chosen based on existing policy instruments in the forest sector to inform the design of REDD+ benefit sharing. The case studies illustrate how the assessment framework can be flexible to specific contexts in its potential application to REDD+, and how it can also be applied separately to assess specific elements of a national REDD+ program to derive policy lessons.

Design of Policy Instruments for REDD+ Benefit Sharing

The first component of the framework is an analysis of how a given BSM performs as a policy instrument in terms of its administrative and organizational *design* in the distribution of benefits to the target beneficiary groups. We examine how the benefits are being distributed through the policy instrument, i.e. the actors involved, the processes of distribution and decisionmaking, and whether or not the selection of stakeholders and beneficiary groups match the predefined objectives of the instrument. The benefit sharing instrument is effective if the incentives or revenues reach the targeted stakeholders within a reasonable amount of time, efficient if incentives reach targeted stakeholders with lowest administrative and transaction costs and equitable if (i) relevant beneficiaries or stakeholders are represented, recognized and able to participate in decisions on criteria for how beneficiaries are identified, and the size, timing and type of benefits to be delivered, (ii) the share of incentives distributed among stakeholders adheres to an agreed fairness criterion and (iii) all potential stakeholders have the capacity to engage in the BSM.

As Cameroon progressed in its policy discussions on REDD+, there was clear interest in building on existing institutional practices and policy instruments in the forestry and environment sectors (MINEPDED, 2013), although there was also divergence in opinions proposing a transformation or design of new instruments to fit the REDD+

[3]The CIFOR-led project 'Opportunities and challenges in implementing REDD+ benefit sharing mechanisms in developing countries' (2012–2016) examined the issue of REDD+ benefit sharing in 6 countries and from various angles, from the study of economic costs and benefits of enabling forest policy options to the calculation of implementation and opportunity costs of REDD+ pilot initiatives, to assessing multi-level governance and decisionmaking on forests and land use, and to understanding how rights and tenure affect equity and preferences in benefit sharing. The plurality of studies called for a framework for consolidating the results in a cohesive manner for informed policymaking. www.cifor.org/redd-benefit-sharing

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regime (Somorin *et al.*, 2014). Assembe-Mvondo *et al.* (2015) analyzed four types of revenue redistribution mechanism, each with specific governance and institutional arrangements[4] – Annual Forest Fees, Council Forest Revenues, Wildlife Royalties and Community Forest Revenues – to assess the functioning of these instruments and applicability to REDD+. The main objectives of the policy instruments are to support poverty reduction and local development of forest communities, which appear at least compatible with Cameroon's objective for REDD+ as a development tool (MINEPDED, 2013).

Building primarily on the work of Assembe-Mvondo *et al.* (2015), and extracting lessons from other studies assessing Cameroon's forest and land taxation systems (Oyono *et al.*, 2009; Cerutti *et al.*, 2010; Assembe-Mvondo *et al.*, 2013), the 'infrastructure' behind the revenue redistribution policy instruments is assessed following a defined set of criteria and indicators on the effectiveness, efficiency and equity effects, and presented in Table 2.

The studies are consistent in finding that the revenue redistribution instruments' structure, targeting and distribution of benefits are ineffective, and highlight that the design of the policy instruments reflects flaws in the existing institutional context factors. The policy instruments are not effective as the administrative processes at multiple government levels are overly complex, have cumbersome bureaucracy and lack proper accountability mechanisms that could support better financial governance. There is also evidence that suggests that all the revenue redistribution mechanisms have high transaction costs due to the opaque administrative processes, which hinders local communities from taking advantage of the presented opportunities, and which also in part enables rent capture by some forest and political elites (Oyono *et al.*, 2009; Cerutti *et al.*, 2010; MINFOF, 2013; Lescuyer *et al.*, 2013; Assembe-Mvondo *et al.*, 2015). As a consequence, the development objectives of the policy instruments are largely unmet (Oyono *et al.*, 2009; Cerutti *et al.*, 2010; Assembe-Mvondo *et al.*, 2015).

Although the beneficiaries of forest revenues are defined by local ownership rights (such as community forests or commune forests) or by location to exploited forests, issues of inequitable distribution have been raised by those councils without forests or located next to protected areas, claiming that Cameroon's forests belong to all Cameroonians (Oyono *et al.*, 2009; Cerutti *et al.*, 2010). Local communities, in turn, believe the distribution and utilization of the Annual Forestry Fee to be unfair and only contribute to increasing the wealth of the State, the mayors and local leaders (Oyono *et al.*, 2009). Further, it can be argued that the lack of participation and inclusiveness in decisionmaking structures of the forest revenue redistribution policies has reinforced the historical marginalization of women and forest minorities such as the Pygmy groups (Oyono, 2005; Assembe-Mvondo, 2006; Topa *et al.*, 2009). This is a problem that may be repeated as forest dwelling communities continue to be sidelined in REDD+ processes (Dkamela *et al.*, 2014).

Wider Institutional and Policy Contexts

The second part involves an assessment of the institutional and policy contexts, including changes that might have taken place to either improve forest governance (e.g. policies or measures to increase enforcement or coordination across sectors), remove perverse incentives that drive deforestation behavior, or involve devolution of rights to local managers (whether at level of local governments, communities or individual households), and how they are being implemented. Although such policy instruments may have been designed with the objective of improving overall forest governance, there may be both direct and indirect benefits and costs involved. Various *institutional and policy context factors* exist, and they can have an effect on both the design of the policy instruments and their outcomes (Börner and Vosti, 2013). These factors 'involve the basic institutions of a society, consisting in the formal and informal rules that govern society (economic, political, social institutions)' (Ring and Schröter-Schlaack, 2011, p. 15). Relevant factors for REDD+ BSM include existing legal frameworks, particularly those relating to land and forest tenure and rights, the level of governance relative to the forest resources and BSM, operational structures and administrative capacity for the implementation and monitoring of the instrument, and the transaction and opportunity

[4]Assembe-Mvondo *et al.* (2015) assessed implementation of the revenue redistribution policy instruments based on a study of the legal and regulatory frameworks of the instruments (Ordinance 74–1 of 6 July 1974 to Establish Rules Governing Land, and Law 94 of 20 January 1994 on Forestry, Wildlife and Fisheries Regulations), reviewed official finance and tax statistics and collected field data from 15 villages in four council areas that receive the forest revenues, namely Yokadouma (Boumba and Ngoko division, East region), and Nieté, Lokoundje and Akom 2 (Ocean division, South region).

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Criterion	Definition of criterion as applied to an assessment of the policy instrument design	Indicators	Assessment findings
Effectiveness	The incentive distribution mechanism is effective if the incentives reach the targeted stakeholders within a reasonable time.	· Reaches targeted stakeholders · On time.	· The beneficiaries of the mechanisms are clearly identified – state at the central level, councils and local communities. · The administration for redistribution of funds involves multiple procedures at both national and regional levels, resulting in long and complex processes. · The frequency and size of payments were uncertain, with some councils and local communities not receiving the annual revenues in several years.
Efficiency	The incentive distribution mechanism is efficient if the incentives reach the targeted stakeholders with lowest administrative costs, within the shortest amount of time. In the case of Cameroon, efficiency refers to the transaction costs[7]: · costs related to the preparation and implementation processes · costs connected to the bureaucracy.	· Percentage of revenue received by defined stakeholders · Time taken to distribute benefits to stakeholders · Cost of implementing the policy · Cost of receiving the revenue · Monitoring and evaluation in place.	· A significant amount of funds was 'lost' during the redistribution process, indicating high inefficiency and evidence of fraud. · High transaction costs related to complicated bureaucratic processes hinders councils and local communities from taking advantage of the opportunities. · High costs related to distance from beneficiaries to revenue redistribution administration. · Sizeable share of funds is put into support of management committees, which is another layer of institutional structures. · Funds were often not wholly used for the purposes intended, for example leaving half-completed community infrastructure.
Equity	· The process of revenue distribution is equitable if · beneficiaries are represented, recognized, and participate in the process of defining targeting criteria and making decisions on size, timing and type of benefits · the share of incentives distributed among stakeholders adheres to an agreed fairness criterion (equality, merit, need, libertarian) · all potential stakeholders' capacity to engage in the benefit sharing mechanism is enabled.	· Targeting beneficiaries according to the objectives · Benefits reach the targeted groups and fit their defined criteria · The level of participation and inclusiveness of stakeholders in decisionmaking on · setting conditionalities · targeting criteria · investment of benefits · access to information · transparency · timing and type of benefits.	· Beneficiaries are identified based on clear criteria and objectives, although there is a call for wider inclusion to all regions (with or without forests)) on the basis of Cameroon's forest as a national good. · Concern that revenues from forest taxes only benefit the state and local elites. · Participation in decisionmaking processes is managed by, and largely limited to, village- or council-level organizations or management committees with

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Criterion	Definition of criterion as applied to an assessment of the policy instrument design	Indicators	Assessment findings
			limited participation – much of the power is concentrated with the local authorities (e.g. mayors). · Marginalized groups (women, minorities) are under-represented in the decisionmaking committees. · Low access to information and uncertainty regarding shares of payments. · Lack of accountability in how funds are allocated/managed. · Types of benefit provided with the revenues (e.g. community infrastructure) inconsistent across study sites.

Table 2. Indicators used in the assessment of the design of a benefit sharing policy instrument: Cameroon's forest and wildlife revenue redistribution mechanisms (Oyono *et al.*, 2009; Cerutti *et al.*, 2010; Assembe-Mvondo *et al.*, 2013, 2015)
[7]Assembe-Mvondo *et al.*, 2015; Cerutti *et al.*, 2010

costs associated with the implementation of the instrument. These factors are obviously inter-linked and mutually reinforcing in various ways.

For the purpose of assessing one policy instrument within the mix, the institutional factors are effective if they enable/support implementation of the BSM through clear definition and enforcement of land and forest tenure and rights (and, correspondingly, the relevant beneficiaries and stakeholders), established monitoring and data management capacity. It is efficient if achieved with lowest administrative costs and within the shortest amount of time. And it is equitable if relevant stakeholders are enabled to, and actually do, participate in the process. The distribution of responsibilities, costs and benefits both horizontally and vertically across different stakeholder groups is also an important equity criterion.

The considerations of institutional context factors are applied to the case of forest rights in Vietnam (Table 3). Yang *et al.* (2016)[5] analyzed the FLA processes and decisionmaking at multiple levels from the subnational to the local to understand the contrasts and similarities between different governance arrangements and their impacts on effectiveness, efficiency and equity. The FLA program is aimed at devolving forest rights to local communities and individuals in order to encourage local forest protection and development in rural forested regions (Castella *et al.*, 2006; Phuc *et al.*, 2012; Trung *et al.*, 2015). These rights are in turn a pre-condition for eligibility to incentives, such as Vietnam's national Payment for Forest Environmental Services (PFES) and eventually REDD+ (Phuc *et al.*, 2012). An important socio-political contextual factor that colors the FLA is the state dominance in forest land management under Vietnam's centralized governance system, yet there have been discrepancies between provinces in its implementation (Clement and Amezaga, 2009, 2013). Decisionmaking processes and outcomes vary due to flexibility provided at the subnational level to implement national policies within their jurisdictions (Clement and Amezaga, 2013). Building primarily on Yang *et al.* (2016), and extracting lessons from other studies examining different aspects of the FLA policy in practice (Clement and Amezaga, 2013, 2009; Phuc *et al.*, 2012), the FLA as a con-

[5]The earlier study by Yang *et al.* (2015) conducted 100 key informant semi-structured interviews across multiple levels in two provinces, Nghe An and Dien Bien, within two districts and four communes of each province. The sites at commune level were identified by the presence of incentive-based policy instruments (such as PFES and the national reforestation program), as well as those with (perceived) increasing or decreasing carbon emissions as a result of changing land and forest use/management.

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Criteria	Criteria as applied to assessment of policy and institutional context	Indicators	Assessment findings
Effectiveness	Change of institutional factors is effective if they enable/support the implementation of the BSM, e.g. property rights defined/ clarified and enforced, monitoring and data management capacity built up.	· Property rights (carbon and land tenure defined) · Forest policy in place and implemented · Administrative responsibilities shifted (within and across governance levels) · Number of trained government staff · Clear rules/guidance · Monitoring and evaluation in place.	· Mismatch between central- and local-level government politics and policy goals leads to uneven and variable policy implementation. · FLA processes vary across sites, ranging from complete to incomplete to poor and sometimes requiring a process of re-allocation. · Forest policy and administration is in place, but difficult to implement due to capacity, manpower and financial constraints. · Unreliable (poor quality) forest data, lack of monitoring of FLA process leads to conflicts and possible reallocation of land. · FLA is considered effective when restricting shifting cultivation is reduced and increasing reforestation increased.
Efficiency	Change of institutional factors is efficient if achieved with lowest administrative costs, within the shortest amount of time.	· No of $ to reach above mentioned · Time needed · Cost of implementing forest policy, at different governance levels.	· Incomplete and poor FLA has caused delay in getting the benefits from PFES. · A proper FLA is time intensive but this was considered complete and legitimate in case study sites relative to other related land policies and programs. · Monitoring activities are inefficient, leading to poor data and delaying FLA processes.
Equity	Change of institutional factors is equitable if relevant stakeholders, especially from affected sectors, are enabled to, and actually do, participate in the process, and those changes with distributional effects, such as definition/clarification of property rights, adhere to an agreed fairness criterion (equality, merit, need, libertarian).	· Level of participation across sectors in decisions about institutions, infrastructure and organization · Definition/clarification of property rights adheres to an agreed fairness criterion (equality, merit, need, libertarian).	· Good practices of FLA are associated with participatory processes with local government to identify ownership through historical use. · Equity in FLA involved dividing land equally among community members following egalitarian and libertarian principles. · Inequity persists: the state still manages the majority of good quality forest while local people manage mostly poor quality forests. · As the state manages protected forest, households can engage only through sub-contracts, often

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Criteria	Criteria as applied to assessment of policy and institutional context	Indicators	Assessment findings
			leading to very small shares of the benefits for short one year contracts. · Effectiveness of FLA in stopping shifting cultivation is considered a burden by local people with inadequate compensation.

Table 3. Indicators used in the assessment of institutional and policy context factors: The multi-level governance in Vietnam's FLA (Clement and Amezaga, 2009, 2013; Phuc *et al.*, 2012; Yang *et al.*, 2016)

textual factor in the national PFES policy is assessed following a defined set of criteria and indicators on the effectiveness, efficiency and equity effects, and presented in Table 3.

The assessment results from the case study of two provinces in Vietnam indicate that, despite some progress in allocating forest land to communities and households, the contextual factors underlying the FLA processes can be barriers for other forest policies and programs such as PFES. Overall efforts to promote forest and protection and development policy can lead to inequity at various levels, whether within state agencies or between communities in different areas (Clement and Amezaga, 2009). While centralized policies, roles and responsibilities have been transferred to lower government (Trung *et al.*, 2015), implementation has been uneven and the abilities to implement FLA varied depending in part on the different provinces' objectives, capacity and political ideology (Clement and Amezaga, 2009, 2013; Yang *et al.*, 2016). The status across provinces, and communes, ranges from completed FLA with defined and secure rights, to incomplete FLA processes, to poor FLA practices with unclear land user rights. The allocation of forest land is based on field-based inventories of forest area, quality and type with the added challenge of identifying historical land users, and is overall a resource heavy process. Inconsistent and poor quality forestry data often rendered FLA processes inadequate (Phuc *et al.*, 2012). Under such conditions, efficiency of forest policy and programs are weakened, as often re-allocation is required as a result.

The quality of FLA implementation has further consequences for equity and effectiveness of forest protection efforts, as allocations define eligibility for forest benefit sharing mechanisms such as PFES. FLA process influences the amount of PFES payments as these are based on forest type and size, amongst other factors (Yang *et al.*, 2016). Findings (Pham *et al.*, 2013; Phuc *et al.*, 2012) indicated that in some cases the number of hectares allocated to households was so small that the benefits provided by PFES would find it impossible to compete with other more profitable opportunities, thus forcing forest land owners to accept lower returns. This perceived inequity is exacerbated as FLA is designed in part to stop shifting cultivation (Clement and Amezaga, 2009), and its success in achieving this goal means transferring the burden to local communities who have long practiced shifting cultivation as their main livelihoods. This point highlights the link between FLA and the institutional and policy contexts and how its variable effectiveness has influenced the implementation of a BSM, shaping who can participate, how benefits are assigned and how it affects motivations towards forest protection. This highlights the link between how the institutional context of an enabling policy can have an indirect effect on the effectiveness of the BSM instrument, as discussed in following section.

Impact on Beneficiaries' Motivations for Behavior Change to Achieve Outcomes

In this third subsection, we assess how the benefit sharing policy instrument can affect the *motivations for behavior change* of the target beneficiaries towards desired policy outcomes. The instrument is effective if there are additional environmental, social or economic outcomes gained relative to the policy objective. It is efficient if the local beneficiaries are motivated to change behavior with lowest marginal management and implementation costs, and it is equitable if incentives, costs and risks are distributed according to an agreed fairness criterion (equality, merit, need, libertarian), and if beneficiaries have the opportunity to participate in decisions over how benefits

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are delivered and freedom of choice on how to use them. PES and REDD+ are envisioned as performance-based incentives to influence the economic considerations of costs and benefits related to individuals' decisions to engage in forest and land use behavior. Individuals are not motivated by economics alone, however; individual perceptions of fairness and legitimacy (Sommerville *et al.*, 2010; van Noordwijk *et al.*, 2012; Pascual *et al.*, 2014), social norms (Kinzig *et al.*, 2013) and the broader institutional and organization environment (Getnet *et al.*, 2014) can also have substantial impacts on the participation of both the individual and the wider community and thus the efficacy of an intervention.

Building primarily on Loft *et al.* (2017), Yang *et al.* (2015) and Pham *et al.* (2014), and extracting lessons from other studies examining different aspects of the PFES in Vietnam (Phuc *et al.*, 2012), we examined the local motivations to achieve outcomes of PFES, a national policy instrument to compensate or reward local forest owners for protecting the forests. PFES is designed as a results-based mechanism to improve management of forests, increase forest area and quality and improve social wellbeing of the local people. This case study is an extension of the previous section on multi-level governance in FLA processes in Vietnam looking in particular at the local beneficiaries' perception of equity with regards to the payments and how this can potentially affect motivations for behavior change towards forest management and protection.[6] The PFES impacts at the local level are assessed following a defined set of criteria and indicators on effectiveness, efficiency and equity, and presented in Table 4.

The assessment of PFES outcomes in Vietnam indicates that socio-cultural norms, economic drivers and trust in the local governance structure at the local scale strongly color perceptions of equity and behavior change. In particular, the assessment framework allows for the identification of structural and design aspects of the PFES policy instrument that will require further improvement in how benefits or payments are distributed. The assessment findings indicate that the current approach to PFES distribution overlooks the needs of local people, and in certain cases results in inefficient use. When the small revenue streams are divided equally amongst all households, high transaction costs of distribution and ineffectiveness of the small amounts of finances will likely lower motivations to manage or protect the forest (Phuc *et al.*, 2012; Yang *et al.*, 2015). Although the approach of equal payments meets the local interpretation of 'equity', as perhaps informed by socialist beliefs, it overlooks other important aspects of what may be considered as fair (Luttrell *et al.*, 2013; Pham *et al.*, 2014; Yang *et al.*, 2015; Loft *et al.*, 2017). For example, other local interpretations of equity within communities in the case study include adjusting the payments based on efforts, thus those who engage in forest protection activities should receive higher payments as compensation, or accounting for past achievements made by individual land and forest managers in providing ecosystem services. Where there is lack of trust in the local governance structure, however, the preference for equal payments is particularly strong to avoid possibility of elite capture (Pham *et al.*, 2014). There is also a certain level of perceived inequity and ineffectiveness when substantive amounts of PFES funds are directed towards state-owned plantations holding large areas of forests. Inequity is also perceived in the transference of costs and burdens: one point is tied to the broader institutional context, where the ecosystem service buyers (hydropower and water utility companies) simply pass on the cost of having to pay into the national PFES fund by increasing the rates to their customers in their utility bills (Pham *et al.*, 2014; Yang *et al.*, 2015). Another point of contention is where the FLA's success in stopping shifting cultivation is perceived as a burden or cost transferred to local people with the low PFES payments as inadequate or unfair compensation.

Discussion of Results

The evaluation of a policy instrument for distribution of incentives to motivate policies and behavior towards forest management and protection is a challenge, as it is situated within two complex interlinked spheres: the first sphere

[6]Pham *et al.* (2014) suggest that local people's preferences for how revenue from PFES is distributed and used, and their ability to influence decisions on how the revenues are spent, can shape the scheme's effectiveness in achieving forest management and poverty reduction goals. Two similar studies examined this issue using data gathered from focus group discussions, village head surveys and household interviews (Pham *et al.*, 2014, interviewed 124 households in three communes in Son La province; Yang *et al.*, 2015, interviewed 179 households in four communes in Dien Bien province). The two studies come to a similar conclusion in that decisions on how the PFES revenues are spent or distributed are in part shaped by the perceived trustworthiness and capability of village authorities, by the level of funds received and by local definitions of 'equity'.

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Criteria	Criteria as applied to the assessment of motivations for behavior change at the local level	Indicators	Assessment findings
Effectiveness	The policy instrument (BSM) is effective in terms of motivating behavior change if the marginal environmental, social or economic benefits associated with the given instrument objective are higher than alternative policy instruments.	· Reaches objective of reduced poverty, increased forest protection and reduced state budget to cover forest protection activities · Monitoring behavior change as a result of the BSM and actions implemented to distribute benefits · Compliance and enforcement.	· Contributed to community collective action in forest protection, which reinforces local sense of wellbeing. · High opportunity costs from competing land uses are a major constraint to sustained forest protection behavior. · Lack of a functioning monitoring and evaluation system to measure effectiveness and behavior change. · Where FLA processes were considered legitimate, this was perceived to have positive outcomes.
Efficiency	The BSM is efficient in terms of motivating behavior change if the policy objectives are achieved with lowest marginal costs.	· Level of benefits vs level of efforts/ costs of beneficiaries · Ratio of investments put in vs measures of reaching target or objective.	· Small payments divided equally to households that are spread across large groups are not efficient. · A certain percentage of PFES funds are allocated to enable administration of the funds, which is considered insufficient for managing local concerns.
Equity	The BSM is equitable in terms of motivating behavior change if incentives, costs and risks are being distributed according to an agreed fairness criterion (equality, merit, need, libertarian), and beneficiaries have freedom of choice on how to use benefits.	· Level of benefits and costs distributed across stakeholders · Freedom of choice in how to use benefits · Participation in decisions on benefit distribution · Mechanisms for two way information flows are in place.	· Local preferences are not captured in the distribution of PES revenues. · Trust in local governance strongly affects local perceptions of equity. · Lack of local participation in decisionmaking hampers engagement in forest management activities. · Revenues are unpaid in some cases due to incomplete FLA and increase perceptions of inequity. · Equal sharing of revenues does not necessarily equate to equity and can disenfranchise those who put more effort into forest management and protection. · The shared revenues are too small compared with efforts and opportunity costs incurred. · Lack of an effective grievance mechanism does not allow for conflicts to be voiced.

Table 4. Indicators used in the assessment of a policy instrument on local motivations for behavior change toward outcomes: Local perceptions of equity in the PFES BSM in Vietnam (Phuc *et al.*, 2012; Pham *et al.*, 2014; Yang *et al.*, 2015; Loft *et al.*, 2017)

is that of institutional and policy context factors of forest governance, and the second is the local socio-cultural-political conditioning factors that underlie human behavior and actions. The challenges in being able to assess attribution of different design features of an incentive policy instrument to outcomes of behavior change in reducing deforestation and forest degradation are apparent, as it is often difficult to understand exactly what affects change

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within the complex constellation of interlinked institutional and policy context factors, and local conditioning factors. This is a weakness of the assessment framework. It presents a somewhat stylized structure, with three clearly differentiated components of a policy process that in reality often overlap, are intertwined and mutually reinforcing, as is seen in Case Studies 2 and 3 of Vietnam. The inability to parse out a direct pathway from policy to output has clear implications for the results-based payment approach of REDD+. Policies and policy implementation however are influenced strongly by historical and contextual factors, and a strength of the framework is thus in identifying obstructionist factors to be addressed – factors that hinder larger, transformational change in economic, regulatory and governance frameworks that are required to actually realize a REDD+ agenda (Brockhaus and Angelsen, 2012; Di Gregorio *et al.*, 2012).

In applying our assessment framework to case studies in Vietnam and Cameroon, we gain insights into the critical importance of how the effectiveness, efficiency and equity aspects of an incentive-based policy instrument or benefit sharing mechanism is shaped by institutional contextual factors and socio-political norms, and identifies areas where improvement is required. In the case of the forest and wildlife revenue redistribution policy instrument in Cameroon, the effectiveness, efficiency and equity of how the revenues reach targeted stakeholders are constrained by heavy bureaucracy, lack of transparency and low participation, resulting in high transaction costs, perceived inequity and few lasting benefits for the local communities. A future mechanism for REDD+ benefit sharing in Cameroon has to avoid duplicating or reinforcing the procedural and governance flaws identified in the assessment of the existing revenue redistribution instruments. Possible solutions might include a multi-stakeholder approach to identifying the different risks to a REDD+ benefit sharing mechanism and what would be adequate safeguards, which will be critical to the credibility of the policy process and one avenue to support stronger governance and management (Brockhaus *et al.*, 2014). In this case, the assessment framework highlights that the policy instrument is a reflection of its institutional context – and in order to achieve an effective, efficient and equitable revenue redistribution instrument, there may need to be reforms in the institutional context as well.

The FLA process in Vietnam is characterized by a mismatch in the governance and decisionmaking on forest use and management at multiple levels, low capacity and poor quality data and monitoring, resulting in delayed benefits, a sense of inequity between state agencies and local people, and unclear boundaries between forests and other land uses. The assessment highlights areas in the institutional context factors to be addressed. First is to understand the differences in political interests and goals between the central- and lower-level governments. While decentralization often leads to 'flexibility' or variation in governance practices (Trung *et al.*, 2015; Yang *et al.*, 2016; Loft *et al.*, 2017), assessing how objectives of a policy instrument at central level can be translated into local goals is critical for achieving the policy outcomes. Findings from the case study assessment clearly demonstrate a need for guidance and resources to implement 'good practices' of FLA (associated with increased participatory and comprehensive land assessment processes). This might include training, capacity and budget to the district, commune and village levels of government, and to customary leaders, who are often marginalized in such policy processes. Good practices of FLA were perceived by lower levels of government to engender improved forest management practices, in particular through reduced shifting cultivation and increased restoration of forests. More importantly, good FLA practice appears to be strongly correlated with a more equitable contextual condition for policy instruments such as PFES and REDD+.

The third case study, of the PFES program in Vietnam, highlighted the challenges of ensuring that a forest incentive will actually lead to desired behavior change at the local level given the complexity of socio-cultural norms and local governance practices driving equity perceptions and inadequacy of the incentive relative to economic costs incurred. For example, while local governments perceive FLA to be a success in restricting shifting cultivation (a long-practiced land use in uplands of Vietnam), local people perceive this as a heavy burden on their livelihoods, particularly with little compensation from low PFES payments (Pham *et al.*, 2013). These issues relating to lack of a fair reward structure and simple transfer of costs and responsibilities from utility companies to local forest land owners or national achievements at the expense of local burdens must be addressed adequately through a legitimate and inclusive process of assessing local needs and preferences, or social motivation to manage and protect forests will simply be lost.

Our assessment highlights the challenges of how a REDD+ policy could achieve its desired outcomes – and the implications for a results-based payment approach. If REDD+ financing is to be allocated at the country level

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as appears to be the case in recent years through development aid budgets (Angelsen, 2017), this means that countries will have to bear the costs and risks of non-performance. In our study, this assessment framework provides a practical approach to identify factors that hinder or constrain performance as part of a policy learning and adaptation process.

Conclusions: Identifying Solutions within a Complex Policy mix

The design of a benefit sharing mechanism would ideally follow on from having first specified REDD+ objectives and taking into account contextual institutional and policy factors to come up with policy instruments that deliver the REDD+ benefits to targeted beneficiaries. Policymaking however rarely follows such sequential steps. In applying the assessment framework to the three case studies of forest policy instruments, there are clear trade-offs between effectiveness, efficiency and equity – and issues of managing transparency, enabling access to information, implementing robust monitoring and evaluation systems, considering local perceptions of equity and building inclusive decisionmaking processes appear to be key pieces to the 3E puzzle. These are useful lessons for the design of a REDD+ benefit sharing mechanism. Being able to connect a benefit sharing mechanism or policy instrument to the institutional context factors that would influence its design and the conditional factors that influence outcomes – and to have a set of criteria and indicators for assessing how the three elements interconnect – is one step towards a more holistic approach to policymaking.

Hence, while complexity is a challenge, it cannot be an excuse for inaction. Reflexivity in policy appraisal or assessment provides space to consider the plurality of opinions or options, and in so doing exposes the underlying values, interests and subjective assumptions to critical reflection (Howard *et al.*, 2016). The assessment framework provides an approach to (re)consider what alternative policy pathways may be possible and to assess the equity implications of who benefits and who pays the costs by capturing this complexity and by providing flexibility in its design and use of appropriate indicators for the 3E criteria. In doing so, it can generate a common understanding of what needs to be assessed and how this can be done systematically, and offers guidance on how to interpret findings and identify actionable ways forward towards more efficient, effective and equitable implementation and a re-evaluation of benefit sharing mechanisms in the context of REDD+.

References

Angelsen A. 2017. REDD+ as result-based aid: general lessons and bilateral agreements of Norway. *Review of Development Economics* **21**(2): 237–264.

Assembe-Mvondo S. 2006. Decentralized forest resources and access of minorities to environmental justice: an analysis of the case of the Baka in the Southern Cameroon. *International Journal of Environmental Studies* **63**(5): 681–690.

Assembe-Mvondo S, Brockhaus M, Lescuyer G. 2013. Assessment of the effectiveness, efficiency and equity of benefit-sharing schemes under large-scale agriculture: lessons from land fees in Cameroon. *European Journal of Development Research* **25**(4): 641–656.

Assembe-Mvondo S, Wong G, Loft L, Tjajadi JS. 2015. Comparative Assessment of Forest Revenue Redistribution Mechanisms in Cameroon: Lessons for REDD+ Benefit Sharing. Working Paper 190. CIFOR: Bogor, Indonesia.

Assunção JJ, Monteiro JCM. 2012. Coming out of the shadows? Estimating the impact of bureaucracy simplification and tax cut on formality in Brazilian microenterprises. *Journal of Development Economics* **99**(1): 105–115.

Börner J, Vosti SA. 2013. Managing tropical forest ecosystem services: an overview of options. In Governing the Provision of Ecosystem Services, Muradian R, Rival L (eds). Springer: Heidelberg; 21–46.

Brockhaus M, Angelsen A. 2012. Seeing REDD+ through 4Is: a political economy framework. In Analysing REDD+: Challenges and Choices, Angelsen A, Brockhaus M, Sunderlin WD, Verchot L (eds). CIFOR: Bogor, Indonesia; 15–30.

Brockhaus M, Wong G, Luttrell C, Loft L, Pham TT, Duchelle AE, Assembe-Mvondo S, DiGregorio M. 2014. Operationalizing Safeguards in National REDD+ Benefit Sharing Systems. REDD+ Safeguards Brief No. 2. CIFOR: Bogor, Indonesia.

Brown K, Corbera E. 2003. Exploring equity and sustainable development in the new carbon economy. *Climate Policy* **3**(S1): 41–56.

Castella JC, Boissau S, Thanh NH, Novosad P. 2006. Impact of forestland allocation on land use in a mountainous province of Vietnam. *Land Use Policy* **23**(2): 147–160.

Cerutti PO, Lescuyer G, Assembe-Mvondo S, Tacconi L. 2010. The challenges of redistributing forest-related monetary benefits to local governments: a decade of logging area fees in Cameroon. *International Forestry Review* **12**(2): 130–138.

DOI: 10.1002/eet

Clement F, Amezaga JM. 2009. Afforestation and forestry land allocation in northern Vietnam: analysing the gap between policy intentions and outcomes. *Land Use Policy* **26**(2): 458–470.
Clement F, Amezaga J. 2013. Conceptualising context in institutional reforms of land and natural resource management: the case of Vietnam. *International Journal of the Commons* **7**(1): 140–163.
Corbera E, Brown K, Adger WN. 2007. The equity and legitimacy of markets for ecosystem services. *Development and Change* **38**: 587–613.
Di Gregorio M, Brockhaus M, Cronin T, Muharrom E. 2012. Politics and power in national REDD+ policy processes. In Analysing REDD+: Challenges and Choices, Angelsen A, Brockhaus M, Sunderlin WD, Verchot L (eds). CIFOR: Bogor, Indonesia; 69–90.
Dkamela G, Brockhaus M, Kengoum Djiegni F, Schure J, Assembe MS. 2014. Lessons for REDD+ from Cameroon's past forestry law reform: a political economy analysis. *Ecology and Society* **19**(3): 30.
Getnet K, Pfeifer C, MacAlister C. 2014. Economic incentives and natural resource management among small-scale farmers: addressing the missing link. *Ecological Economics* **108**: 1–7.
Gross-Camp N, Martin A, McGuire S, Kebede B, Munyarukaza J. 2012. Payments for ecosystem services in an African protected area: exploring issues of legitimacy, fairness, equity and effectiveness. *Oryx* **46**: 24–33.
Halpern BS, Klein CJ, Brown CJ, Beger M, Grantham HS, Mangubhai S, Ruckelshaus M, Tulloch VJ, Watts M, White C, Possingham HP. 2013. Achieving the triple bottom line in the face of inherent trade-offs among social equity, economic return, and conservation. *Proceedings of the National Academy of Sciences* **110**: 6229–6234.
Hargrave J, Kis-Katos K. 2013. Economic causes of deforestation in the Brazilian Amazon: a panel data analysis for the 2000s. *Environmental and Resource Economics* **54**(4): 471–494.
Howard RJ, Tallontire AM, Stringer LC, Marchant RA. 2016. Which 'fairness', for whom, and why? An empirical analysis of plural notions of fairness in Fairtrade Carbon Projects, using Q methodology. *Environmental Science and Policy* **56**: 100–109.
Huppes G. 2001. Environmental policy instruments in a new era. WZB Discussion Paper, No. FS II 01–404.
Irawan S, Tacconi L, Ring I. 2014. Designing intergovernmental fiscal transfers for conservation: the case of REDD+ revenue redistribution to local governments in Indonesia. *Land Use Policy* **36**: 47–59.
Ituarte-Lima C, McDermott C, Mulany M. 2014. Assessing equity in national legal frameworks for REDD+: the case of Indonesia. *Environmental Science and Policy* **44**: 291–300.
Kinzig AP, Ehrlich PR, Alston LJ, Arrow K, Barrett S, Buchman TG, Daily GC, Levin B, Levin S, Oppenheimer M, Ostrom E. 2013. Social norms and global environmental challenges: the complex interaction of behaviors, values, and policy. *Bioscience* **63**: 164–175.
Konow J. 2003. Which is the fairest one of all? A positive analysis of justice theories. *Journal of Economic Literature* **41**: 1186–1237.
Lescuyer G, Ngouhouo Poufon J, Defo L, Walde Z, Ngassi M. 2013. Evaluation financière de la chasse sportive. In Etude de l'importance économique et sociale du secteur forestier et faunique au Cameroun, Eba'a Atyi R, Lescuyer G, Ngouhouo Poufon J, Moulende Fouda T (eds). CIFOR: Bogor, Indonesia; 177–187.
Lindhjem H, Aronsen I, Bråten KG, Gleinsvik A. 2010. Experiences with Benefit Sharing: Issues and Options for REDD-Plus. Oslo: Econ Pöyry.
Loft L, Le DN, Pham TT, Yang AL, Tjajadi JS, Wong GY. 2017. Whose equity matters? National to local equity perceptions in Vietnam's Payments for Forest Ecosystem Services Scheme. *Ecological Economics* **135**: 164–175.
Loft L, Ravikumar A, Gebara MF, Pham TT, Resosudarmo IAP, Assembe-Mvondo S, Tovar JG, Mwangi E, Andersson K. 2015. Taking stock of carbon rights in REDD+ candidate countries: concept meets reality. *Forests* **6**(4): 1031–1060.
Luttrell C, Loft L, Gebara MF, Kweka D, Brockhaus M, Angelsen A, Sunderlin W. 2013. Who should benefit from REDD+? Rationales and realities. *Ecology and Society* **18**(4): 52.
May PH, Veiga Neto F, Denardin V, Loureiro W. 2002. Using fiscal instruments to encourage conservation: municipal responses to the 'ecological' value-added tax in Paraná and Minas Gerais, Brazil. In Selling Forest Environmental Services: Market-Based Mechanisms for Conservation and Development, Pagiola S, Bishop J, Landell-Mills N (eds). Earthscan: London; 173–199.
McDermott M, Mahanty S, Schreckenberg K. 2012. Examining equity: a multidimensional framework for assessing equity in payments for ecosystem services. *Environmental Science and Policy* **33**: 416–427.
Ministry of the Environment, the Protection of Nature and Sustainable Development (MINEPDED). 2013. Cameroon: Readiness Preparation Proposal (R-PP), Revised January 2013. Forest Carbon Partnership Facility, UNREDD and World Bank: Washington, DC.
Ministry of Forests and Wildlife (MINFOF). 2013. Evaluation des mandats 2009–2013 des COVAREF No 1, 2,3, 6, 10 et élaboration d'un plan triennal de redynamisation. Document de travail de l'Atelier des 5 et 6 Décembre 2013. Fondation Tri-Nationale Sangha–World Wide Fund for Nature: Yaoundé, Cameroon.
Mumbunan S, Ring I, Lenk T. 2012. Ecological Fiscal Transfers at the Provincial Level in Indonesia. UFZ-Diskussionspapiere 06/2012. Leipzig.
Muradian R, Corbera E, Pascual U, Kosoy N, May PH. 2010. Reconciling theory and practice: an alternative conceptual framework for understanding payments for environmental services. *Ecological Economics* **69**: 1202–1208.
OECD. 1997. Evaluating Economic Instruments for Environmental Policy. OECD: Paris.
OECD. 2007. Instrument Mixes for Environmental Policy. OECD: Paris.
Oyono PR. 2005. From diversity to exclusion for forest minorities in Cameroon. In The Equitable Forest: Diversity, Community, & Resource Management, Colfer CJP (ed.). Resources for the Future: Washington, DC; 113–130.
Oyono PR, Cerutti PO, Morrison K. 2009. Forest Taxation in Post-1994 Cameroon: Distributional Mechanism and Emerging Links with Poverty Alleviation and Equity. World Resources Institute: Washington, DC.
Pascual U, Muradian R, Rodriguez L, Duraiappah A. 2010. Exploring the links between equity and efficiency in payments for environmental services: a conceptual approach. *Ecological Economics* **69**: 1237–1244.
Pascual U, Phelps J, Garmendia E, Brown K, Corbera E, Martin A, Gómez-Baggethun E, Muradian R. 2014. Social equity matters in payments for ecosystem services. *Bioscience* **64**(11): 1027–1036.

DOI: 10.1002/eet

Pham TT, Brockhaus M, Wong G, Dung LN, Tjajadi JS, Loft L, Luttrell C, Assembe-Mvondo S. 2013. Approaches to Benefit Sharing: a Preliminary Comparative Analysis of 13 REDD+ Countries. Working Paper 108. CIFOR: Bogor, Indonesia.

Pham TT, Moeliono M, Brockhaus M, Le DN, Wong GY, Le TM. 2014. Local preferences and strategies for effective, efficient, and equitable distribution of PES revenues in Vietnam: lessons for REDD+. *Human Ecology* **42**(6): 885–899.

Phuc XT, Dressler WH, Mahanty S, Pham TT, Zingerli C. 2012. The prospects for Payment for Ecosystem Services (PES) in Vietnam: a look at three payment schemes. *Human Ecology* **40**: 237–249.

Ring I, Schröter-Schlaack C. 2011. Justifying and assessing policy mixes for biodiversity and ecosystem governance. In *Instrument Mixes for Biodiversity Policies*, POLICYMIX Report, Issue No. 2/2011, Ring I, Schröter-Schlaack C (eds): Leipzig; 14–35.

Schokkaert E, Devooght K. 2003. Responsibility-sensitive fair compensation in different cultures. *Social Choice and Welfare* **21**: 207–242.

Schröter-Schlaack C, Ring I, Koellner T, Santos R, Antunes P, Clemente P, Mathevet R, Borie M, Grodzińska-Jurczak M. 2014. Intergovernmental fiscal transfers to support local conservation action in Europe. *German Journal of Economic Geography* **58**: 98–114.

Sommerville M, Jones JP, Rahajaharison M, Milner-Gulland EJ. 2010. The role of fairness and benefit distribution in community-based Payment for Environmental Services interventions: a case study from Menabe, Madagascar. *Ecological Economics* **69**(6): 1262–1271.

Somorin OA, Visseren-Hamakers IJ, Arts B, Sonwa DJ, Tiani AM. 2014. REDD+ policy strategy in Cameroon: actors, institutions and governance. *Environmental Science and Policy* **35**: 87–97.

Topa G, Karsenty A, Megevand C, Debroux L. 2009. The Rainforests of Cameroon: Experience and Evidence from a Decade of Reform. World Bank: Washington, DC.

Trung LQ, Phuong VT, Yang AL, Hai VD. 2015. The Distribution of Powers and Responsibilities Affecting Forests, Land Use, and REDD+ across Levels and Sectors in Vietnam: a Legal Study. Occasional Paper 137. CIFOR: Bogor, Indonesia.

Turner RK, Opschoor JB. 1994. Environmental economics and environmental policy instruments: introduction and overview. In Economic Incentives and Environmental Policies: Principles and Practice, Opschoor JB, Turner RK (eds). Kluwer: Dordrecht; 1–38.

van Noordwijk M, Leimona B, Jindal R, Villamor GB, Vardhan M, Namirembe S, Catacutan D, Kerr J, Minang PA, Tomich TP. 2012. Payments for Ecosystem Services (PES): evolution towards efficient and fair incentives for multifunctional landscapes. *Annual Review of Environment and Resources* **37**: 389–420.

Vatn A. 2015. Markets in environmental governance – from theory to practice. *Ecological Economics* **117**: 225–233. https://doi.org/10.1016/j.ecolecon.2014.05.005.

Vatn A, Barton DN, Lindhjem H, Movik S, Ring I, Santos R. 2011. *Can Markets Protect Biodiversity? An Evaluation of Different Financial Mechanisms*. Norad Report 19/2011. Oslo: Norad.

Wunder S. 2015. Revisiting the concept of payments for environmental services. *Ecological Economics* **117**: 234–243. https://doi.org/10.1016/j.ecolecon.2014.08.016.

Yang AL, Pham TT, Dieu H, Wong G, Le ND, Tjajadi JS, Loft L. 2015. *Lessons from Perceptions of Equity and Risks in Payments for Forest Environment Services (PFES) Fund Distribution: a Case Study of Dien Bien and Son La Provinces in Vietnam*. Brief 36. Bogor, Indonesia: CIFOR.

Yang AL, Quang TL, Vu PT, Nguyen TD. 2016. Analyzing Multilevel Governance in Vietnam: Lessons for REDD+ through Land Use Change and Benefit Sharing in the Provinces of Nghe An and Dien Bien. CIFOR working paper no. 218. Bogor, Indonesia: CIFOR.