An assessment framework for REDD+ benefit sharing mechanisms within a forest policy mix

Wong GY, Loft L, Brockhaus M, Yang AL, Pham TT, Assembe-Mvondo S, Luttrell C

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 national contexts and 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) within the various institutional and governance structures a where such a REDD+ benefit sharing mechanism is situated? This is a pressing issue given the results-based aspect of REDD+. We present here a three-element assessment framework for evaluating 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; and (3) outcomes of REDD+ including emissions 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 decision-making processes. The framework aims not 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.

1   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 behaviour 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), can 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?

---

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

Decision makers 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 feedback into improving its design as part of policy learning and adaptation. This paper first presents the structural flow of thee 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 the economic and governance aspects.

2 Conceptual framework

2.1 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.

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 structures 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 emissions reductions, poverty alleviation and economic development (see Figure 1). The different elements are discussed further in the following paragraphs.

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

Insert Figure 1 here

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

---

[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.

behaviour 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 behaviour away from deforestation or forest degrading activities or towards forest restoration, similar in principle to payment for environmental services (PES) schemes (Wunder 2015, Vatn 2014). 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+ (Irawan et al. 2014, Mumbunan et al. 2012). Ideally, the intergovernmental fiscal transfers contribute to changing the behaviour of local government policy-making 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, a REDD+ BSM is only one instrument within a policy mix to reduce deforestation and degradation. In addition to the influence of REDD+ incentives on the motivation of land stewards and policymakers at different levels of government, there are *institutional context factors* that also affect the outcome of a REDD+ policy, 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 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 the Indonesian Presidential Decree No. 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 affects the implementation of future policy instruments. Direct command and control regulation and enforcement may be needed, as 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 sq km in 2004 to less than 5,000 sq km in 2012 is largely attributed to changes in the Brazilian law enforcement strategy and related governance systems (Assunção et al., 2012, Hargrave and Kis-Katos, 2013).

In the third assessment element, a REDD+ policy or intervention is also affected by, and affecting other sectoral or cross-sectoral policies such as agricultural development subsidies or low emissions development strategy. These policies have an indirect effect on the motivation and behaviour of land stewards, and government/administration of subnational governance levels. These effects have to be taken into account when assessing BSMs. These *conditioning factors*, socio-political, cultural, economic and environmental influences of behaviour change, are an important piece of the puzzle in assessing a REDD+ BSM. In case study 3, we examined how the national PES program in Vietnam is perceived by the local beneficiaries through the lens of local equity concerns and how this affects their motivation and forest and land use behavior.

2.2   Performance assessment criteria

We evaluate REDD+ benefit sharing as a policy instrument using a predefined set of criteria relating to effectiveness, efficiency (Turner and Opschoor, 1994; Michaelis, 1996; OECD, 1997; Gunningham, 1998), and equity (Corbera et al., 2007; McDermott et al., 2012, Vatn et al., 2011).[3]

Equity is increasingly recognized as a key factor in achieving REDD+ or PES outcomes (Pascual et al., 2014, Sommerville et al., 2010). However, while indicators of effectiveness and efficiency can be more easily identified and agreed upon, equity is inherently relativistic (Ituarte-Lima, 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

---

[3] **Effectiveness** relates to the impacts or performance of the instrument. It covers the contribution/the degree of a change in behaviour through the policy instrument that contributes to a defined policy objective (environmental, social or economic), i.e. the measured marginal benefits associated with a given instrument (Ring and Schröter-Schlaack, 2011; Lindhjem et al., 2010; OECD, 2007; OECD, 1997). For REDD+ these would include reductions of carbon emissions from deforestation and degradation, enhanced provision of non-carbon ecosystem services and biodiversity conservation, poverty alleviation and increased economic development.

"**Efficiency** relates to the extent to which an instrument enables a cost-effective achievement of policy objectives. The administrative costs associated with the instrument to achieve a certain policy objective (Turner and Opschoor, 1994) can be assessed using a cost-benefit criterion (the marginal cost of implementing a given instrument should be less than its marginal benefit) and/or a cost-effectiveness criterion (the marginal cost of applying a given instrument should be as low as possible) (OECD, 2007)" (Ring and Schröter-Schlaack, 2011: 21).

Equity can be divided in three dimensions. Distributive equity refers to the allocation of outcomes and their impacts on different stakeholders in terms of costs, risks, and benefits (Corbera et al., 2007, Proctor et al., 2008, Pascual et al., 2010, McDermott et al., 2012). Procedural equity, refers to participation in decision making and inclusion and negotiation of competing views (Brown and Corbera, 2003), classified by Vatn et al. (2011) as legitimacy of process. 'Contextual equity' (McDermott et al., 2012) or 'equity of access' (Brown and Corbera, 2003) relates to the existing social conditions – the ways in which different actors in society are able to engage with and participate due to existing capabilities and external factors including information, communication and knowledge, and the way institutions operate at different scales.

evaluated in the implementation of the REDD+ policy or intervention. Examples of such normative fairness principles are a needs-based, merit-based or egalitarian distribution (Luttrell et al. 2013, Pascual et al. 2010). Yet, the feasibility of ensuring equity (with its multifaceted social dimensions) and its potential interactions and trade-offs with efficiency and effectiveness is still only an emerging field of study. 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 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.

3   From concept to application: assessing BSM structure, context and outcome

In this section, we illustrate how the three elements of the framework illustrated in Figure 1: (1. Design of a REDD+ benefit sharing mechanism (objectives and policy instrument); 2. Institutional and policy contexts; 3. Outcomes (and motivations to achieve them)) 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

9

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.

Each of the case studies correspond to an element of the assessment framework and are part of a portfolio of studies carried out under the CIFOR REDD+ benefit sharing project[4]. 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.

3.1   Structures 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 **structures** 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 decision making, 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 least administrative and transaction

---

[4] 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 decision-making 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 policy-making. www.cifor.org/redd-benefit-sharing

costs; and equitable, if (i) relevant beneficiaries or stakeholders are represented, recognized, and are 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) if all potential stakeholders' have the capacity to engage in the BSM.

As Cameroon progressed in its policy discussions on REDD+, there was clear interest to build on existing institutional practices and policy instruments in the forestry and environment sectors (MINEPDED, 2013), although there were also divergence in opinions proposing a transformation or design of new instruments to fit the REDD+ regime (Somorin et al. 2013). Assembe-Mvondo et al. (2015) analyzed four types of revenue redistribution mechanisms, each with specific governance and institutional arrangements[5]: 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 to Cameroon's objective for REDD+ as a development tool (MINEPDED, 2013).

Building primarily on Assembe-Mvondo et al. (2015), and extracting lessons from other studies assessing Cameroon's forest and land taxation systems (Assembe-Mvondo et al., 2013, Cerruti et al., 2010, Oyono et al., 2009), 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 1 below.

---

[5] 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 No. 74-1 of 6 July 1974 to Establish Rules Governing Land, and Law No. 94 of 20 January 1994 on Forestry, Wildlife and Fisheries Regulations), a review of official finance and tax statistics, and collected field data from 15 villages in four council areas who receive the forest revenues, namely Yokadouma (Boumba and Ngoko division, East region), and Nieté, Lokoundje and Akom 2 (Ocean division, South region).

Insert Table 1 here

The studies are consistent in finding that the revenue redistribution instruments' structure, targeting and distribution of benefits are ineffective, and highlights that design of the policy instruments reflect 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 (Assembe-Mvondo et al., 2015; Lescuyer et al., 2015; MINFOF, 2013; Cerruti et al., 2010; Oyono et al., 2009). As a consequence, the development objectives of the policy instruments are largely unmet (Assembe-Mvondo et al., 2015; Cerruti et al., 2010; Oyono et al., 2009).

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 has been raised by those councils without forests or located next to protected areas, claiming that Cameroon's forests belong to all Cameroonians (Cerruti et al., 2010; Oyono et al., 2009). 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 decision-making structures of the forest revenue redistribution policies has reinforced the historical marginalization of women and forest minorities such as the Pygmy groups (Topa et al., 2009; Assembe-Mvondo, 2006; Oyono, 2005). This is a problem that may

be repeated as forest dwelling communities continue to be sidelined in REDD+ processes (Dkamela et al., 2014).

3.2 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 behaviour, 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 context factors** exist, and they can have an effect on both the design of the policy instruments and well as 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, 2011:15). 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 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 least administrative costs and within the least amount of time. And it is equitable, if relevant stakeholders are enabled to, and actually participate in the

process. The distribution of responsibilities, costs and benefits both horizontally and vertically across different stakeholder groups are also an important equity criteria.

The considerations of institutional context factors are applied to the case of forest rights in Vietnam (Table 2). Yang et al. (2016) [6] analyzed the FLA processes and decision-making 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., 2013, Trung at 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 at 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, 2013, 2009). Decision-making 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 at al., 2012), the FLA as a contextual 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 2 below.

---

[6] The study by Yang et al. (2015a) 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 levels were identified due to the presence of incentive-based policy instruments (such as PFES and the national reforestation program), as well as those (perceived) with increasing or decreasing carbon emissions, as a result of changing land and forest use/management.

Insert Table 2 here

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 and 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 (Yang et al., 2016, Clement and Amezaga, 2013, 2009). 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 in some cases, the number of hectares allocated to households were so small that the small benefits provided by PFES would be impossible to compete with other more profitable opportunity costs., 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.

3.3 Impact on beneficiaries to achieve outcomes

In the third part, we assess how the benefit sharing policy instrument can affect the **motivation and behaviour** of the target beneficiaries towards desired outcomes of changes in land and forest use behaviour. The instrument is effective if there are additional environmental, social or economic benefits gained relative to the policy objective. It is efficient if the policy objectives are achieved with least marginal costs, and it is equitable if incentives, costs and risks are being distributed according to an agreed fairness criterion (equality, merit, need, libertarian), and if beneficiaries have the opportunity to participate in decisions over how benefits 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 behaviour. 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 wider community and thus the efficacy of an intervention.

Building primarily on 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 forest land allocation processes in Vietnam by looking in particular at the local beneficiaries' perception of equity with regards to the payments and how this can potentially effect motivation and behaviour towards forest management and protection[7]. The PFES outcomes at the local level are assessed following a defined set of criteria and indicators on the effectiveness, efficiency and equity effects, and presented in Table 3.

Insert Table 3 here

The assessment of PFES outcomes in Vietnam finds that socio-cultural norms, economic drivers and trust in the local governance structure at the local-scale strongly colour perceptions of equity and behaviour 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

---

[7] 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 in 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 for 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".

in certain cases, result 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,). 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 to account 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 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.

4   Discussion of results

The evaluation of a policy instrument for distribution of incentives to motivate policies and behaviour towards forest management and protection is a challenge as it is situated within two complex interlinked spheres: the first sphere is that of institutional factors, governance and policy instruments for forest governance; and the second is the local socio-cultural-political

contexts that underlie human behaviour and actions. The challenges in being able to assess attribution of different design features of an incentive policy instrument to outcomes of behaviour change in reducing deforestation and forest degradation are apparent as it is often difficult to understand exactly what affects change within the complex constellation of interlinked institutional and policy factors, and contextual conditions. 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 the 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, effectiveness, efficiency and equity outcomes 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

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 forest land allocation (FLA) process in Vietnam is characterized by a mis-match in the governance and decision-making 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), 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 PFES program in Vietnam highlighted the challenges of ensuring that a forest incentive will actually lead to desired outcome and behaviour 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 shifrting cultivation (a long-practiced land use in uplands of Vietnam), local people perceive this as a heavy burden when on their livelihoods particularly with little compensation from low PFES payments (Pham et al., 2013). These issues relating to lack of a fair rewards 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 would 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 as appears to be the case in recent years through development aid budgets (Angelsen, 2013), 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.

5   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 decision-making processes appear to be key

21

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 policy making.

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., 2015). The assessment framework provides an approach to (re)consider what alternative policy pathways may be possible and to assess their equity implications of who benefits and who pays the costs, by capturing this complexity and providing flexibility in its design and use of appropriate indicators to the 3E criteria. In doing so, it can generate a common understanding of what needs to be assessed, how this can be done systematically, and offers guidance on how to interpret findings and identify actionable ways forward towards a more efficient, effective and equitable implementation and re-evaluation of benefit sharing mechanisms in the context of REDD+.

References

Angelsen A. 2013 *REDD+ as performance-based aid: General lessons and bilateral agreements of Norway*. WIDER Working Paper No. 2013/135. Helsinki: UNU World Institute for Development Economics Research (UNU-WIDER).

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.

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. 2006. Decentralized forest resources and access of minorities to environmental justice: An analysis of the case of the Baka in the Southern Cameroon. *The International Journal of Environmental Studies* 63(5):681- 90.

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: Muradian R. and L. Rival (eds). *Governing the Provision of Ecosystem Services*, 21-46, Springer, Heidelberg.

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.

Brockhaus M, Angelsen A. 2012. Seeing REDD+ through 4Is: A political economy framework. In Angelsen A, Brockhaus M, Sunderlin WD and Verchot L, eds. *Analysing REDD+: Challenges and choices*. Bogor, Indonesia: Centre for International Forestry Research, pp.15–30.

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, and 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 and 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.Clement F., and 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, and 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).

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 Angelsen A, Brockhaus M, Sunderlin WD and Verchot L, eds. *Analysing REDD+: Challenges and choices*. Bogor, Indonesia: Centre for International Forestry Research, pp. 69-90.

Dkamela, G., M. Brockhaus, F. Kengoum Djiegni, J. Schure, and S. Assembe Mvondo. 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.

Gunningham N. 1998. Introduction, in: Gunningham, N., Grabosky, P. (Eds.), *Smart Regulation: Designing Environmental Policy*. New York: Oxford University Press, 3-36.

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.

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* R. Eba'a Atyi, G. Lescuyer, J. Ngouhouo Poufon, T. Moulende Fouda, eds. *Etude de l'importance économique et sociale du secteur forestier et faunique au Cameroun*. Bogor, Indoneisa: CIFOR. 177–87.

Lindhjem H, Aronsen I, Bråten KG, Gleinsvik A. 2010. *Experiences with benefit sharing: issues and options for REDD-plus*. Oslo: Econ Pöyry.

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).

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: Pagiola, S., Bishop, J., Landell-Mills, N. (Eds.), *Selling Forest Environmental Services: Market-based Mechanisms for Conservation and Development*. Earthscan, London, pp. 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* http://dx.doi.org/10.1016/j.envsci.2012.10.006.

Michaelis P. 1996. Ökonomische Instrumente der Umweltpolitik. Physica-Verlag, Heidelberg.

[MINEPDED] Ministry of the Environment, the Protection of Nature and Sustainable Development. 2013. *Cameroon: Readiness Preparation Proposal (R-PP), Revised January 2013*. Washington DC: Forest Carbon Partnership Facility, UNREDD and World Bank.[MINFOF] Ministry of Forests and Wildlife. 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. Yaoundé, Cameroon: Fondation Tri-Nationale Sangha/World Wide Fund for Nature.

Mumbunan S, Ring I, Lenk T. 2012. *Ecological fiscal transfers at the provincial level in Indonesia*, UFZ-Diskussionspapiere, No. 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, Cerutti PO and Morrison K. 2009. *Forest taxation in post-1994 Cameroon: Distributional mechanism and emerging links with poverty alleviation and equity*. Washington DC, World Resource Institute.

Oyono PR. 2005. From diversity to exclusion for forest minorities in Cameroon. *In* CJP Colfer, ed. *The Equitable Forest: Diversity, Community, & Resource Management*. Washington DC: Resource for the Future. 113–30.

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.

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.

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.

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. Bogor, IndonesiaPhuc 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.

Proctor W, Köllner T, Lukasiewicz A. 2008. Equity considerations and payments for ecosystem services. *Environmental Economy and Policy Research Working Papers 31. Department of Land Economy.*Cambridge, UK: University of Cambridge.

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

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. *The German Journal of Economic Geography* 58: 98-114.

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

Sommerville M, Jones J P, 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*. Washington DC: The World Bank.

Turner RK, Opschoor JB. 1994. Environmental Economics and Environmental Policy Instruments: Introduction and Overview, in: Opschoor, J.B., Turner, R.K. (Eds.), *Economic Incentives and Environmental Policies: Principles and Practice*. Kluwer, Dordrecht, pp. 1-38.

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. Bogor, Indonesia: CIFOR.

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, 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.

Vatn A. 2015. Markets in environmental governance — From theory to practice. *Ecological Economics* 117: 225-233. doi:10.1016/j.ecolecon.2014.05.005

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

Yang AL, Quang TL, Vu PT, Nguyen TD. 20162016. *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, in press.

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.

Table 1: Indicators used in the assessment of a benefit sharing policy instrument: Cameroon's forest and wildlife revenue redistribution mechanisms (Assembe-Mvondo et al. 2015, 2013, Cerruti et al., 2010, Oyono et al., 2009)

Criteria	Definition of criteria as applied to an assessment of the policy instrument infrastructure	Indicators	Assessment findings
Effectiveness	The incentive distribution mechanism is effective if the incentives reach the targeted stakeholders within 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 least administrative costs, within least amount of time. In case of Cameroon, efficiency refers to the transaction costs[8]: • costs related to the preparation and implementation processes	• 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 were "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 the revenue redistribution administration.

[8] Assembe-Mvondo et al. 2015; Cerruti et al., 2010

	• costs connected to the bureaucracy.		• Sizeable share of funds are 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 decision making on:
		  • setting conditionalities
		  • targeting criteria
		  • investment of benefits
		  • access to information
		  • transparency
		  • the 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 basis Cameroon's forest as a national good.
			• Concern that revenues from forest taxes only benefit the state and local elites.
			• Participation in decision-making processes is managed by, and largely limited to village- or council-level organizations or management committees with limited participation – much of the power is concentrated with the local authorities (e.g. mayors).
			• Marginalized groups (women, minorities) are under-represented in the decision-making committees.
			• Low access to information and uncertainty regarding shares of payments.
			• There is lack of accountability in how funds are allocated/managed.
			• The types of benefits that were provided with the revenues (e.g, community infrastructure) were

			inconsistent across the study sites.

Table 2. Indicators used in the assessment of institutional context factors: the multi-level governance in Vietnam's Forest Land Allocation (FLA) (Clement and Amezaga, 2009, 2013, Phuc et al., 2012, Yang et al., 2016)

Criteria	Criteria as applied to assessment of institutional and policy 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	• Mis-match 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, man power 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 least administrative costs, within in the least amount of time.	• Amount 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

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

Table 3. Indicators used in the assessment of outcomes: Local behavior change from PFES program in Vietnam (Pham et al., 2014, Phuc et al., 2012, Yang et al., 2015)

Criteria	Criteria as applied to the assessment of outcomes at the local level	Indicators	Assessment findings
Effectiveness	The policy instrument is effective in terms of outcomes, if the	• Reaches objective of reduced poverty, increased forest	• Contributed to community collective

	marginal environmental, social or economic benefits associated with the given instrument objective are higher than alternative policy instruments	protection and reduced state budget to cover forest protection activities • Coordination of benefits distribution and actions • Monitoring results of the policies and actions implemented to distribute benefits • Compliance and enforcement	action in forest protection. • 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. • Where forest land allocation processes were considered legitimate, this was perceived to have positive outcomes. • Large PFES payments to state owned companies with large forest areas may be ineffective. • Generate significant funding for state agencies to invest in forest protection.
Efficiency	The instrument is efficient in terms of outcomes, if the policy objectives are achieved with least marginal costs.	• Level of benefits vs. level of efforts/costs • Ratio of $ put in vs. measures of reaching target or objective	• Small amount of 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.
Equity	The instrument is equitable in terms of outcomes if incentives, costs and risks are being distributed according to an agreed fairness criterion (equality, merit, need, libertarian), and beneficiaries have the freedom of choice on how to use benefits	• Level of benefits and costs distributed • Freedom of choice in how to use benefits	• Local preferences are not captured in the distribution of PES revenues. • Trust in local governance is a concern in how local equity is perceived. • Lack of local participation in decision-making. • Revenues are unpaid in some cases due to incomplete FLA.

			- Equality sharing of revenues do not necessarily equate to equity and can disenfranchise those who put in more effort into forest management and protection. - The shared revenues are too small compared to efforts put in and opportunity costs incurred. - Lack of an effective grievance mechanism do not allow for conflicts to be voiced.