



**USAID**  
FROM THE AMERICAN PEOPLE



LOWERING EMISSIONS  
IN ASIA'S FORESTS



# Decision Support Tool on Incentive Allocation for Integrated REDD+ Accounting

# **USAID Lowering Emissions in Asia's Forests (USAID LEAF)**

Decision Support Tool on Incentive Allocation for  
Integrated REDD+ Accounting

John Costenbader, Jeremy Broadhead, Lauren Stanley

November 2015



The USAID Lowering Emissions in Asia's Forests (USAID LEAF) Program is a five-year regional project (2011-2016) focused on achieving meaningful and sustainable reductions in greenhouse gas (GHG) emissions from the forest-land use sector across six target countries: Thailand, Laos, Vietnam, Cambodia, Malaysia and Papua New Guinea.

# Contents

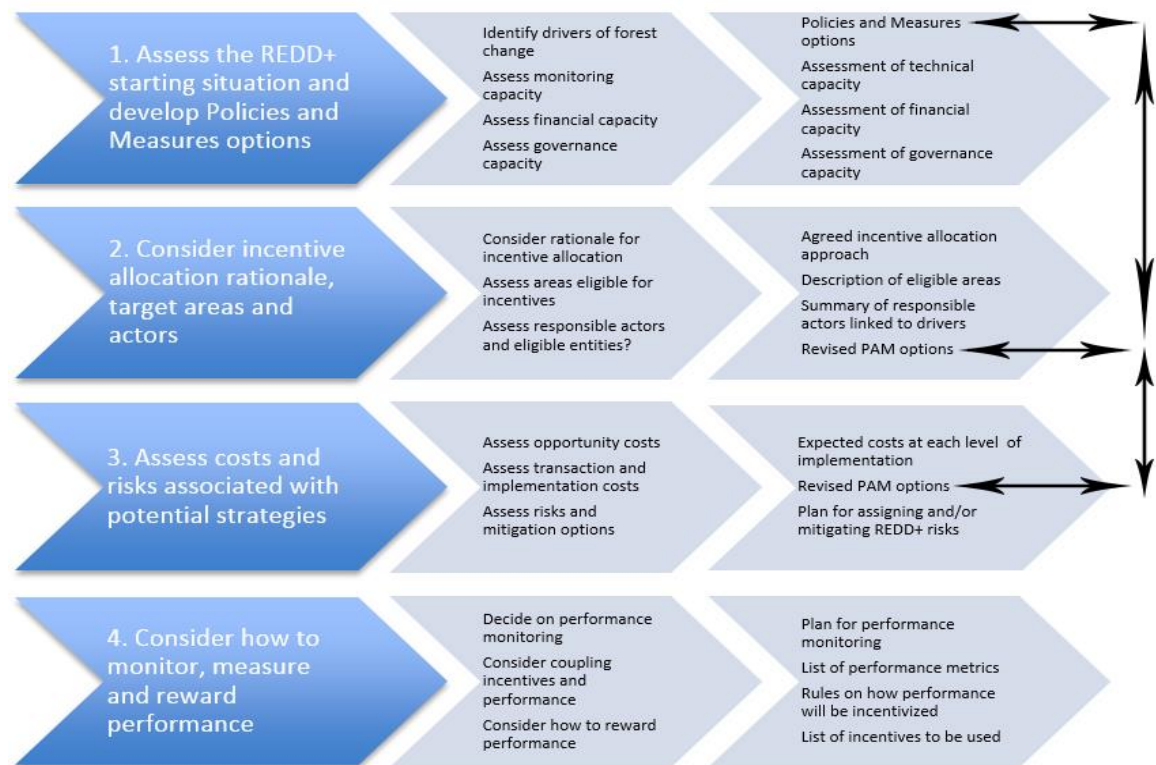
<b>Overview .....</b>	<b>7</b>
<b>Part A: Introduction .....</b>	<b>8</b>
<b>1 Background .....</b>	<b>8</b>
<b>2 Objectives and audience .....</b>	<b>9</b>
<b>Part B: Steps and considerations in integrated incentive allocation .....</b>	<b>10</b>
<b>1 Assess the REDD+ starting situation and develop Policy and Measure (PAM) options 10</b>	
1.1 What are the drivers of forest change and how might they be addressed? .....	10
1.2 What level of monitoring and measurement capacity exists? .....	12
1.3 What are the existing financial capacities? .....	13
1.4 What are the existing governance capacities? .....	14
<b>2 Consider incentive allocation rationale, target areas and actors .....</b>	<b>16</b>
2.1 What rationale will incentive allocation follow? .....	16
2.2 Which areas are eligible for incentives? .....	19
2.2.1 Identify rights over forests and forest carbon .....	20
2.3 Who are the responsible actors and eligible entities? .....	21
<b>3 Assess costs and risks associated with potential strategies .....</b>	<b>24</b>
3.1 What are the expected opportunity costs at each level? .....	25
3.2 What are the expected transaction and implementation costs at each level? .....	26
3.3 What are the main risks and how should they be minimized? .....	28
<b>4 Consider how to monitor, measure and reward performance .....</b>	<b>31</b>
4.1 How will performance be monitored and/or measured? .....	31
4.1.1 Decide what performance indicators will be used .....	32
4.2 How will incentives and performance be coupled? .....	33
4.3 How will performance be rewarded? .....	34
<b>References .....</b>	<b>36</b>
National and International Law and Policy .....	36
Literature .....	36

## Boxes, Figures and Tables

Box 1: Institutional assessment.....	14
Box 2: Ecuador & Mexico incentives prioritizing actors and areas .....	18
Box 3: ROSE Tool for prioritizing REDD+ activities in Ghana, Tanzania and Uganda .....	18
Box 4: Defining "Forest" under the Kyoto Protocol .....	19
Box 5: Land rights security and REDD+ incentives .....	20
Box 6: Forest Carbon Rights .....	21
Box 7: Incentive Allocation Schemes in Brazil, Vietnam & Papua New Guinea .....	22
Box 8: Opportunity Cost Estimation in Cambodia.....	26
Box 9: Transaction and Implementation Costs in REDD+ Countries .....	27
Figure 1: Steps in design and establishment of a REDD+ incentive allocation system, showing the activities during each step and the resulting outputs.....	7
Figure 2: Potential Drivers of Deforestation and Forest Degradation by Sector .....	11
Table 1. REDD+ incentive allocation rationales.....	16
Table 2: Incentive Allocation Scenarios in an integrated REDD+ System.....	30
Table 3: Performance Indicators in Norwegian Contracts .....	33

## Overview

This decision support tool follows four main steps as indicated in Figure 1. Although developed with each step building on the previous, the different activities may be alternated, run in parallel or run independently as befits the national context or progress with the national REDD+ strategy or action plan.



**Figure 1: Steps in design and establishment of a REDD+ incentive allocation system, showing the activities during each step and the resulting outputs**



## Part A: Introduction

### 1 Background

Under the United Nations Framework Convention on Climate Change (UNFCCC), Reducing Emissions from Deforestation and Forest Degradation (REDD+) countries are required to develop approaches that ultimately operate at national scale.<sup>1</sup> However, as an interim measure, many countries already have in place or are establishing subnational and project-level REDD+ activities and entities to fulfill aims such as building capacity for REDD+ implementation or generating early emissions reductions and removals in defined geographical or administrative areas. To move towards a complete national REDD+ framework, projects and subnational efforts need to be integrated into national systems. The development of such integrated REDD+ systems will require consideration of how incentives will be allocated.

Incentive allocation is a central component of REDD+ and involves the transfer of monetary or non-monetary incentives to enable or motivate actors to implement activities that result in emissions reductions or removals.<sup>2,3</sup> Though upfront finance is often required to cover start-up costs of activities aimed at generating carbon revenues, REDD+ incentives at the national level and within projects are, or will be, received in return for achievement of results in terms of CO<sub>2</sub> emissions reductions and removals measured against a baseline. These results-based payments will in turn need to be distributed to lower levels in an economically efficient, equitable, and environmentally effective manner, either in return for emissions reduction or some other related measure.

Incentive allocation may be linked to and triggered by performance indicators included in the national REDD+ measuring, monitoring, reporting and verification (MMRV) system. However, direct links with emissions reductions and removals, or other indicators, are not necessarily required for REDD+ implementation at the national or subnational level. As such, requirements necessary to obtain incentives will be a key consideration in designing a REDD+ incentive allocation mechanism.

Many other considerations will need to be taken into account including which actors, sectors and areas will be targeted, how incentive rates will be set and when incentives will be provided. Different actors in different areas may also be provided with different incentives, e.g., direct monetary payments, tradable carbon credits, or in-kind goods and/or services. These decisions will be influenced by the extent to which equity, poverty reduction or other program goals play a part in REDD+ and the emphasis given to effectiveness and efficiency in reducing emissions.

With many important decisions to be addressed in designing a REDD+ incentive allocation system, an inclusive multi-stakeholder process will be essential in building procedural legitimacy and ensuring the effectiveness of the systems developed.<sup>4, 5</sup> In addition, as there

---

<sup>1</sup> UNFCCC Decision 1/CP.16, para 71.

<sup>2</sup> Forest Carbon Partnership Facility (FCPF). 2012. *FAQ about benefit sharing*. Background Note on Benefit Sharing for REDD+ regional dialogue, June 2012. Washington, DC: Program on Forests (PROFOR).

<sup>3</sup> Incentive allocation is also referred to as “benefit sharing”. The terms “incentive” and “benefit” are used interchangeably in this document. However, the term “incentive” is preferred to emphasize the linkage between REDD+ upfront (or results-based) payments and implementation of activities to reduce emissions.

<sup>4</sup> Pham et al. 2013, *supra* note 36.

<sup>5</sup> Luttrell et al. 2013, *supra* note 35.



is no one-size-fits-all approach, consideration of existing institutions and systems including REDD+ projects and programs will be necessary to contain set-up and recurring costs but also to ensure that REDD+ operates effectively within the national context.<sup>6</sup>

## 2 Objectives and audience

This decision support tool seeks to guide allocation of financial or in-kind incentives to achieve maximum emissions reductions taking into account project and subnational-level REDD+ initiatives. Drivers of forest change and consideration of in-country capacities in forest-related monitoring, financing and governance form the starting point in this guidance rather than more abstract considerations.<sup>7</sup>

This decision support tool is aimed at national level REDD+ decision makers, REDD+ committee or taskforce members, sub-national and local governments, development partners and other stakeholders involved in REDD+ system design. Though this document primarily aims to support the development of incentive allocation mechanisms in integrated or nested REDD+ systems, the information is also relevant to establishing more centralized REDD+ systems.

### Complementary guidance material

This guidance complements and refers to a related technical guidance on how to design integrated REDD+ accounting systems:

- Gibbon, A. et al., 2014. *Planning Guide: Integrating REDD+ accounting within a nested approach*. USAID LEAF.

Users of this guide may also benefit from first reading USAID LEAF's decision support tool for determining whether to pursue an integrated REDD+ accounting approach:

- Broadhead, J. et al., 2013. *Decision support tool: Integrated REDD+ accounting frameworks: Nested national approaches*. USAID LEAF.

Additionally, the following publication provides a more comprehensive overview of the process to identify and address drivers of deforestation and degradation which is integral to the process outlined in this guidance:

- ARKN-FCC (2014) Decision Support Tool Identifying and Addressing Drivers of Deforestation and Forest Degradation. ARKN-FCC/USAID LEAF.

An indexed reference list can be found at the end of this document.

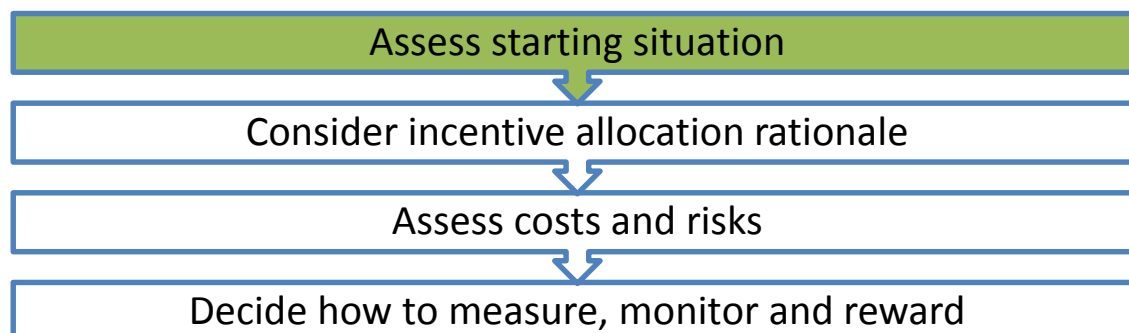
---

<sup>6</sup> Pham et al. 2013, supra note 36. See also, Madeira et al. 2013, supra note 38.

<sup>7</sup> This is premised on donor commitment under the 2005 Paris Declaration in Aid Effectiveness to use country systems and procedures where possible. See Paris Declaration on Aid Effectiveness: Ownership, Harmonisation, Alignment, Results and Mutual Accountability, I(3)vi.

## Part B: Steps and considerations in integrated incentive allocation

### 1 Assess the REDD+ starting situation and develop Policy and Measure (PAM) options



Various choices exist in allocating incentives to support REDD+. An assessment of deforestation and forest degradation drivers and of ‘positive drivers’ of forest conservation, sustainable forest management and enhancement of forest carbon should constitute the initial step in developing the overall incentive allocation system, as outlined in Step 1.1.<sup>8</sup> In many cases, projects and subnational programs will have already carried out such assessments.

Subsequently, existing and potential policies and measures (PAMs) to address and mitigate (negative) or enhance (positive) drivers of forest change can be listed, and related monitoring, financial and governance capacities assessed as outlined in Steps 1.2-1.4 and detailed in Box 1. PAM options can then be adjusted or revised depending on capacity assessments. PAMs, or activities implemented in existing projects and subnational REDD+ interventions, can either be left or brought into line with wider efforts depending on the ultimate level of integration planned in the overall REDD+ system.<sup>9</sup>

Further revision of PAM options and incentive uses can take place following consideration of the rationale for allocating incentives and the costs and risks associated with different strategies, as detailed in Steps 2 and 3. PAMs and incentive allocation methods are also likely to change as REDD+ advances from readiness to results-based payment phases.

#### 1.1 What are the drivers of forest change and how might they be addressed? <sup>10</sup>

Drivers of forest change can be either positive or negative, and direct (e.g., agriculture, logging, cattle ranching, infrastructure development or tree planting) or indirect (e.g. associated with political, economic, institutional or technological change).

The first step in identifying drivers is to gather information on forest change to help identify the geographic areas in which drivers are operating. Information should then be gathered on the conditions that allow deforestation and forest degradation, or afforestation and

<sup>8</sup> Forest Trends and Climate Focus. Nested Projects and REDD+, at 11. USAID.

<sup>9</sup> Gibbon, A. et al., 2014. Planning Guide: Integrating REDD+ accounting within a nested approach. USAID LEAF.

<sup>10</sup> For detailed guidance, see ARKN-FCC (2014) Decision Support Tool Identifying and Addressing Drivers of Deforestation and Forest Degradation.

reforestation to occur.<sup>11</sup> Various means can be used to identify drivers, the scale at which they operate, and the actors involved.

Driver assessments conducted by existing subnational REDD+ programs and projects are likely to provide some of the most valuable guidance in planning national level REDD+ efforts. These REDD+ programs and projects may also be integrated wholesale into the national REDD+ framework and incentives allocation mechanism. Similarly, other existing activities potentially eligible to receive REDD+ incentives should be identified and may also be included in a multilevel incentive allocation system (e.g., PES schemes).

Direct drivers of deforestation are not limited to the forestry sector. In fact, most extend to activities in the agriculture, energy or other sectors (see Figure 2 below). In Asia in particular, the main drivers of deforestation and forest degradation are large-scale commercial logging and agricultural expansion, both often exacerbated by unclear land tenure and weak governance.<sup>12</sup> As such, it may be necessary to consider cross-sectoral and landscape approaches to incentive allocation as discussed further in Step 2.3.<sup>13</sup>

Forest	Agriculture	Energy	Other
<ul style="list-style-type: none"> <li>• Illegal logging</li> <li>• Timber harvesting for local use</li> <li>• Uncontrolled or unsustainable logging</li> </ul>	<ul style="list-style-type: none"> <li>• Subsistence and small scale agriculture</li> <li>• Livestock production and over-grazing</li> <li>• Commercial agriculture</li> <li>• Agricultural expansion</li> </ul>	<ul style="list-style-type: none"> <li>• Fuelwood collection</li> <li>• Charcoal production (legal and illegal)</li> <li>• Hydroelectricity infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Fire</li> <li>• Settlements</li> <li>• Infrastructure development</li> <li>• Mining</li> <li>• Population growth</li> <li>• Immigration</li> <li>• Forest clearing for land sale</li> <li>• Commercial biodiversity poaching</li> <li>• Lack of land use access rights</li> </ul>

Figure 2: Potential Drivers of Deforestation and Forest Degradation by Sector<sup>14</sup>

Once drivers and associated actors are identified, the process to formulate PAMs to address and mitigate (negative) or enhance (positive) drivers of forest change can begin. Where multiple drivers are identified, they may be prioritized according to associated emissions, ease of addressing, ease of measurement and/or attribution, and costs and benefits in social and environmental and economic terms.<sup>15</sup>

To reach REDD+ objectives, PAMs may focus on creating an enabling environment, providing incentives, or introducing disincentives, as follows:

- Enabling environment (e.g., institutional strengthening, information dissemination, research and development, support for policy formulation and improved governance, land use planning, forest monitoring);

<sup>11</sup> Id.

<sup>12</sup> Streck, C. et al. (2010) Options for Managing Financial Flows from REDD+. Climate Focus.

<sup>13</sup> Forest Carbon Partnership Facility. (2014) Linking Local REDD+ Experiences to National REDD+ Strategies. World Bank, Jakarta, Indonesia.

<sup>14</sup> Id. at 6-7.

<sup>15</sup> See Angelsen, A. et al. (2012) Analysing REDD+: Challenges and choices. Chapter 8, at 129-151. CIFOR, Bogor, Indonesia.

- Incentives, either directly incentivizing REDD+ activities (e.g. payments for carbon emissions reductions and removals, support for tree planting, or forest patrolling), or indirectly promoting REDD+ outcomes by incentivizing other activities (e.g., provision of alternative employment, support for company engagement in deforestation free product certification schemes, promotion of efficient use of forest resources);
- Disincentives (e.g. logging bans, land use planning, fines for forest clearing, support for protected areas).

Different approaches to addressing drivers with different balances of incentives and regulation are likely to be appropriate depending on the drivers, such as the following:

- **Most deforestation and forest degradation is planned:** REDD+ policies are likely to consist of traditional regulations (i.e., “command-and-control”) and/or incentives to compensate responsible actors or divert activities to other sectors or areas.<sup>16</sup>
- **Deforestation and degradation are driven by subsistence farming, land clearance and small scale logging, with poverty as an underlying condition:** support for alternative livelihoods and development of sustainable sources of food, fuel and building materials are likely to be prioritized.<sup>17</sup>
- **Large-scale commercial agriculture drives forest conversion:** REDD+ policies could include traditional regulations (e.g., improved land use planning) and support for sustainable agricultural and forestry production (e.g., through schemes to help expand agricultural product certification and forest management certification).
- **Forest management needs to be altered to align with REDD+ objectives and tenure rights are clear:** financial incentives could be provided directly to forest owners, be they communities, companies or individuals.

The range of PAM options is considerable, and a balance of traditional regulations and positive incentives including financial inducements will need to be considered given that recent studies have shown that “no single [economic incentive] or [command-and-control regulatory] instrument is overwhelmingly superior in reducing emissions.”<sup>18</sup> Given domestic and international REDD+ financing constraints, the judicious use of limited financial incentives is likely to be necessary, and complementary regulatory measures will need to be applied.

## 1.2 What level of monitoring and measurement capacity exists?

REDD+-related capacities include monitoring of implementation of forestry activities including REDD+ activities, outputs, and outcomes (see Step 4.1.1), and measurement of GHG emissions and changes in forest extent and condition. Available capacities potentially influence the REDD+ PAMs chosen and the nature of the incentive allocation framework given that it may not be straightforward to monitor or measure the outcomes of some activities. For example, while large-scale forest conversion can be easily tracked using remote sensing, small-scale slash-and-burn and forest degradation associated with illegal

---

<sup>16</sup> Id.

<sup>17</sup> Id.

<sup>18</sup> Liu, Z. et al. 2014. A comparative assessment of economic-incentive and command-and-control instruments for air pollution and CO<sub>2</sub> control in China's iron and steel sector. *J Environ Manage.* 2014 Nov 1;144:135-42. doi: 10.1016/j.jenvman.2014.05.031. (comparing carbon taxes and command and control regulations on CO<sub>2</sub>, SO<sub>2</sub> and NO<sub>x</sub>, and finding carbon taxes to control multiple pollutants well but with limited emissions reductions, and inflexible regulations to significantly reduce emissions independently but not cumulatively). See also, Auffhammer, M, and Kellogg, R. 2011. "Clearing the Air? The Effects of Gasoline Content Regulation on Air Quality." *American Economic Review*, 101(6): 2687-2722. (finding flexible US federal gas emissions regulations to minimize compliance costs but not to improve air quality, whereas targeted, inflexible regulations to significantly improve air quality).

logging are more difficult to monitor.<sup>19</sup> Therefore, iteration may be necessary in honing PAM options.

Countries with high technical capacities may opt to incentivize a wider range of REDD+ activities or even expand beyond REDD+; for example, by including activities covered by domestic payment for ecosystem services programs.<sup>20</sup> Similarly, countries with greater monitoring and measurement capacity are more likely to be able to pursue complex accounting and incentive allocation approaches that better link incentive allocation with emissions reduction.

### 1.3 What are the existing financial capacities?

Financial capacities for REDD+ include the ability to manage and distribute international finance for REDD+. Financial capacity becomes increasingly important as countries transition from readiness to full implementation of REDD+. In particular, international results-based finance for full scale REDD+ implementation is likely to be highly reliant on national capacity for financial governance.

Under the Paris Declaration on Aid Effectiveness, donors committed to use country systems and procedures where possible, including “national arrangements and procedures for public financial management, procurement, audit...”<sup>21</sup> A proportion of REDD+ readiness finance is aimed at building related capacity, and providers of results-based finance typically require countries to have established financial institutions capable of transparently receiving and distributing REDD+ finance.<sup>22</sup>

To incentivize efforts to reduce forestry emissions or increase removals, payment channels and allocation of monetary incentives at the subnational level likely will need to be considered.<sup>23</sup> The mechanisms may be either public or private (e.g., via government-regulated channels or private contracts for emissions reduction). Monetary incentives may be transferred via existing mechanisms, to which a new account or window may be established, or by an entirely new entity or entities.

Government forestry agencies will often be best placed to manage technical forestry activities and work with local populations but may lack capacity to allocate financial incentives. They may also not be the official agency for communicating with international bodies such as the UNFCCC. Conversely, finance agencies will be well placed to manage and account for finances and set appropriate taxes and fees, but lack technical capacity in forest management. Thus, even within governments a combination of agencies may be necessary to allocate REDD+ incentives.

A number of ways of allocating incentives in the forestry sector are currently used in countries establishing REDD+. Common approaches may involve market-based instruments (e.g., PES, CDM, and voluntary carbon market projects), participatory forest management programs, or forest concessions systems. In the case of multilevel REDD+, it is possible that new entities and modified existing entities would be involved in establishing a fund transfer mechanism.

---

<sup>19</sup> Forest Trends and Climate Focus. Nested Projects and REDD+, at 18. USAID.

<sup>20</sup> *Id.*

<sup>21</sup> The Paris Declaration on Aid Effectiveness: Ownership, Harmonisation, Alignment, Results and Mutual Accountability, I(3)vi.

<sup>22</sup> Roe, S. et al. (2014) Safeguards in Bilateral REDD+ Finance. Climate Focus.

<sup>23</sup> Costenbader, J. “Benefit Sharing,” in Costenbader, J. (Ed.) 2009. Legal Frameworks for REDD. Design and Implementation at the National Level, p. 68. IUCN, Gland, Switzerland. URL : <https://portals.iucn.org/library/efiles/documents/EPLP-077.pdf>

## 1.4 What are the existing governance capacities?

Prioritization of incentives will also depend on a country's governance capacities, which are defined here to include organizational and institutional capacity of REDD+ actors and entities, as well as capacities to develop, implement and enforce legislation. Though technical and financial capacities are both immediately important for REDD+, governance capacity is essential for long-term sustainability of REDD+ activities.<sup>24</sup>

Creating an incentive allocation system requires an analysis of existing agencies and entities at various levels to identify those that are best-equipped, determine their respective roles, and consider institutional relationships and processes that must be established. Any needs to create or modify responsibilities should also be considered. Common methods used for institutional assessment are outlined in Box 1.

Where governance is weak, allocating incentives via independent, non-state actors such as nongovernmental or multilateral organizations may be necessary.<sup>25</sup> In these cases, support for governance reform is also likely to be required and incentives could be applied to stimulate action in the private sector. In contrast, countries with good governance and effective enforcement could incentivize REDD+ through a combination of regulatory action combined with incentives applied through government channels or alterations to existing subsidy regimes.<sup>26</sup>

Distribution of responsibilities for incentive allocation at national, subnational and/or project level will be determined by existing capacities and the feasibility of strengthening capacity or creating new institutions.<sup>27</sup> Where capacity is limited, strengthening of centralized institutions is likely to require fewer resources but may also mean that forest owners and stewards would be less likely to be directly engaged in incentive frameworks than with a number of decentralized offices.

### Box 1: Institutional Assessment

Existing REDD+ relevant institutions should be evaluated to highlight gaps, synergies and overlaps between agencies and inform the establishment of a REDD+ incentive allocation framework. The evaluation should identify individual agency responsibilities and ensure that policies incompatible with REDD+ are removed. Various approaches for institutional assessment and organizational mapping exist, including the following:

**Organizational Mapping:** Organizational maps include a description of institutions at different levels and their respective responsibilities, analysis of potential constraints, and stakeholder's perceptions.<sup>28</sup> They can be produced through focus group sessions and interviews to validate the information gathered.

**Stakeholder Analysis:** Stakeholder analysis tests assumptions about the interests of relevant

<sup>24</sup> UN-REDD. Capacity Needs Assessment of Government Institutions at Central, Regional, District and Local Levels for the Establishment and Management of a REDD+ Scheme in Tanzania. Ref No RFP/UNDP/TZA/2011/005 (2012), at 8. URL: [http://www.unredd.net/index.php?option=com\\_docman&task=doc\\_download&gid=8499&Itemid=53](http://www.unredd.net/index.php?option=com_docman&task=doc_download&gid=8499&Itemid=53)

<sup>25</sup> Forest Trends and Climate Focus. Nested Projects and REDD+, at 11. USAID.

<sup>26</sup> Id.

<sup>27</sup> UN-REDD. Capacity Needs Assessment of Government Institutions at Central, Regional, District and Local Levels for the Establishment and Management of a REDD+ Scheme in Tanzania. Ref No RFP/UNDP/TZA/2011/005 (2012) URL: [http://www.unredd.net/index.php?option=com\\_docman&task=doc\\_download&gid=8499&Itemid=53](http://www.unredd.net/index.php?option=com_docman&task=doc_download&gid=8499&Itemid=53)

<sup>28</sup> See The World Bank (2007) Tools for Institutional, Political and Social Analysis of Policy Reform A Sourcebook for Development Practitioners, at 39. The World Bank, Washington DC.

agencies, organizations, groups, and individuals and their responses to program implementation. A stakeholder analysis may also highlight potential political consequences of a new program, unintended impacts on stakeholders, and the applicability of a program that has been successful in another country.

**Causality Frameworks:** Causality frameworks operate on the notion that changes are triggered by inputs (e.g., incentives) which lead to directly linked, immediate outputs (e.g., less forest clearing). These outputs then lead to intermediate outcomes (e.g., emission reductions). Causality frameworks may be used to link actors with activities and ensure incentives are effectively allocated.

Source: Busjeet, 2010.

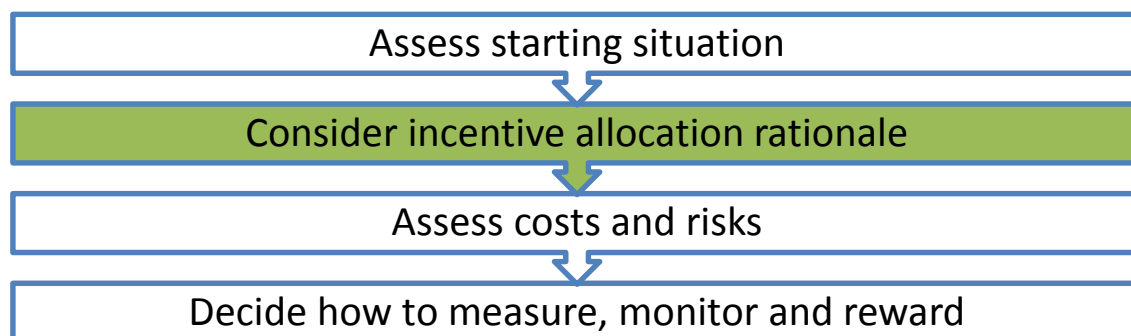
## Outcomes of Step 1

On completion of Step 1, the following should be available:

- Forest cover change assessment and REDD+ Policy and Measure options
- Assessment of existing monitoring and measurement capacities
- Assessment of existing financial capacities
- Assessment of existing governance capacities



## 2 Consider incentive allocation rationale, target areas and actors



The design of the REDD+ incentive allocation framework and choice of fund transfer mechanism will depend to a large degree on the approach chosen to frame the overall REDD+ system.<sup>29</sup> Having listed REDD+ PAM options and assessed monitoring, financial and governance capacities, the objectives of incentive allocation can be considered more closely and specific areas or actors can be prioritized and PAMs revised accordingly. The decisions made will help determine how PAMs should involve different actors and areas and what role incentives should play.

### 2.1 What rationale will incentive allocation follow?

To achieve emission reductions, incentives may best target actors responsible for addressing drivers of deforestation and forest degradation. However, whether incentives should be directed towards those responsible for forest protection or those who stand to lose from reducing deforestation and degradation needs to be considered. The incentive allocation system may also be used to support welfare improvements amongst forest dwellers or may be guided by legal frameworks to avoid allocating incentives to actors who do not hold relevant rights over land and forest resources. The role of facilitators in achieving REDD+ goals should also be considered in determining incentive allocation priorities. Table 1 outlines key considerations associated with different rationales that have been put forward to guide incentive allocation decisions.

**Table 1. REDD+ Incentive Allocation Rationales<sup>30</sup>**

Rationale	Key considerations
Emissions reduction	Rewards effectiveness and efficiency for performance in reducing emissions. Requires capacity to accurately monitor, measure, report and verify emission reductions against a baseline. May result in rewarding large-scale actors and actors responsible for poor performance in the past. <sup>31</sup>
Cost Compensation	Actors should be compensated for implementation, transaction and opportunity costs. Cost-compensation modalities may require less capacity than emission reduction as incentives are more closely related to inputs. However, this also poses a risk and opportunity costs may be difficult to assess and involve contentions.
Legal Rights	Incentives should go to those with statutory or customary rights. Some national

<sup>29</sup> See generally, Luttrell et al. 2013, supra note 35.

<sup>30</sup> See generally, Luttrell et al. 2013, supra note 35, at 7-12.

<sup>31</sup> Id.

	incentive allocation systems, such as Costa Rica's PES system, prioritize clear and secure land tenure arrangements for incentive allocation. <sup>32</sup> In many countries with high REDD+ potential, however, legal rights to forest resources are often contested and a system based on legal rights may therefore be difficult to implement. <sup>33</sup> Poor forest users may also be least likely to possess legal rights and could thereby be excluded. Even where rights are clear, the state may claim separate rights to benefit from carbon trading and set up a secondary system to incentivize REDD+ outcomes. A sound framework to establish and track forest rights would need to be in place, as well as capacity to monitor the contribution of rights holders to REDD+ outcomes.
Stewardship	Incentive allocation to forest stewards (e.g., farmers, landowners, forest dependent communities) rewards both past and future forest conservation. Though this risks rewarding activities that are neither additional nor have high potential impact, prolonged prevention of deforestation or forest degradation may be encouraged and technical, financial and governance capacity requirements are low.
Pro-poor	Poverty reduction is a common goal of REDD+ implementation and without involvement of local people in forested areas, who are often among the poorest, REDD+ may be ineffective. In relation, an Indonesian Ministry of Forestry regulation requires benefits to be distributed to communities adjacent to the REDD+ site. <sup>34</sup>
Effective facilitation	A proportion of incentives should be shared with actors essential for implementation of REDD+ including private actors, NGOs and/or central and local government.

In deciding the approach to follow, existing REDD+ capacities will need to be taken into account. A country with high monitoring, financial and governance capacities may prioritize emission reduction or cost compensation based on legal right. This is more likely where poverty is less widespread or severe, formal rights have been allocated in forest areas and effective institutional mechanisms are in place. In contrast, a country with lower existing REDD+ capacities may choose to focus more on poverty reduction, forest stewardship and facilitators to receive incentives.

In determining the rationale to be followed, tradeoffs between the three following goals highlighted in literature on REDD+ incentive allocation also need to be examined:

- effectiveness (achieving the maximum emissions reduction);
- efficiency (minimizing transaction and implementation costs); and
- equity (distributing incentives fairly to those directly involved in REDD+ and the wider public).<sup>35</sup>

These goals cut across the rationales outlined in Table 1 and can to some extent be prioritized by focusing on specific areas and/or actors. For example, to increase effectiveness in terms of emissions reduction and environmental performance, threatened high carbon stock, high conservation value or contiguous forests might be targeted. To increase efficiency, the focus may turn more towards areas with low opportunity costs and secure

<sup>32</sup> FONAFIFO Website : Environmental Services Payment (PSA) Program. URL:

[http://www.fonafifo.go.cr/home/psa\\_eng/index.html](http://www.fonafifo.go.cr/home/psa_eng/index.html).

<sup>33</sup> Carder, R. (2013) Tenure security and economic interest add up to REDD+ effectiveness – study. CIFOR Blog. URL: <http://bit.ly/1r3FIMd>. URL:

<sup>34</sup> Costenbader, J. (Ed.) (2009) Legal Frameworks for REDD. Design and Implementation at the National Level, at 9-10. IUCN, Gland, Switzerland.

<sup>35</sup> See, e.g., Luttrell, C., L. Loft, M. F. Gebara, D. Kweka, M. Brockhaus, A. Angelsen, and W. D. Sunderlin. 2013. Who should benefit from REDD+? Rationales and realities. *Ecology and Society* 18(4): 52.

land and forest tenure. To increase social equity, REDD+ incentives might target low-income actors or specific social groups (e.g., indigenous, marginalized or remote rural populations).

Some of these priorities are likely to be negatively correlated. For example, the most effective and efficient means to achieve REDD+ objectives may involve only a limited number of wealthy actors with high implementation capacity and strong legal rights and political standing while those involved in forest conservation including indigenous or impoverished groups with weak tenure or low carbon stocks may be excluded. A system incentivizing actors responsible for deforestation and degradation could also reward poor environmental performance in the past,<sup>36</sup> which would undermine the legitimacy of REDD+ while increasing the risk of leakage and non-permanence.<sup>37</sup>

To gain support and legitimacy, a REDD+ program may therefore need to reward a broad range of actors and activities. However, efforts will need to be made to maintain emissions reduction efficiency and keep administration and transaction costs from escalating.<sup>38</sup> With greater focus on equity, greater consideration needs to be given to legal rights, poverty levels, forest stewardship and facilitation in REDD+ incentive allocation.<sup>39</sup>

In practice, the two most important factors to be determined in incentive allocation systems are the areas and actors to be involved as outlined in the sub-steps below. Box 2 illustrates prioritization of incentives according to actors and areas in Ecuador and Mexico. Box 3 details a tool for prioritizing REDD+ activities used in Ghana, Tanzania and Uganda.

#### **Box 2: Ecuador & Mexico Incentives Prioritizing Actors and Areas**

Under the Mexican *Payments for Hydrological Environmental Services* (PSAH) scheme, all landholders with rights to land can register. Applicants are ranked with precedence given to indigenous groups, women, and communities rather than wealthier private landholders. Following this initial ranking, PSAH prioritizes applications from larger more contiguous land areas to promote biodiversity conservation, water filtration and greater carbon mitigation.

In Ecuador's *Socio Bosque* project, smaller landholders are favored through allocation of proportionally higher payments, which are inversely related to the overall size of registered landholdings.

Source: Costenbader, 2011.

#### **Box 3: ROSE Tool for Prioritizing REDD+ Activities in Ghana, Tanzania and Uganda**

The REDD+ Opportunity Scoping Exercises (ROSE) tool was developed by the Katoomba Group following national and sub-national work in Tanzania, Uganda and Ghana in 2009. ROSE serves to evaluate and prioritize subnational REDD+ activities, help develop REDD+ readiness processes and create recommendations on legal, policy and institutional reforms

<sup>36</sup> Luttrell et al. 2013, supra note 35. See also, Pham, T.T., Brockhaus, M., Wong, G., Dung, L.N., Tjajadi, J.S., Loft, L., Luttrell C. and Mvondo, S.A. 2013. *Approaches to benefit sharing: A preliminary comparative analysis of 13 REDD+ countries*. Working Paper 108. CIFOR, Bogor, Indonesia.

<sup>37</sup> Id.

<sup>38</sup> Madeira, E.M., Kelley, L., Blockhus, J., Ganz, D., Cortez, R. and Fishbein, G. 2013. *Sharing the benefits of REDD+: Lessons from the field*. The Nature Conservancy. Arlington, Virginia.

<sup>39</sup> Luttrell et al. 2013, supra note 35.

and actions. The following constitute the main seven steps:

1. Agree on REDD+ project scoring criteria
2. Identify & classify REDD+ project types
3. Score project types against criteria
4. Discuss & select higher potential project types
5. Brainstorm policy, legal & institutional constraints
6. Brainstorm potential project & policy responses
7. Identify potential project sites

In all three workshops, the following top criteria were included in prioritizing activities:

- Opportunity cost associated with the alternative (to REDD) land-use
- Threat level or likely carbon additionality
- Clarity of land tenure
- Clarity of tree tenure (and possibly of carbon property rights)
- Size of forest areas and/or aggregation potential
- Biomass or carbon level of the ecosystem type
- Institutional/governance capacity associated with the project type
- The probable leakage risk associated with a project type
- Potential for replicability or scaling-up of a project type
- Level of community benefits or poverty reduction
- Potential for bundling (adding other ecosystem service payments to REDD+)

Source: Richards, 2009.

## 2.2 Which areas are eligible for incentives?

As a practical sub-step in determining the scope of the REDD+ incentive allocation system, geographical areas eligible and ineligible for incentives should be identified. Although other areas could be targeted for forest rehabilitation, the area designated as forest will form the basis of the national forest monitoring system and REDD+ emissions measurement.

Areas eligible for REDD+ funding are likely to be highly influenced by the definition of forest used in creating reference levels, although areas targeted for afforestation and reforestation may also be considered.<sup>40</sup> Box 4 below provides an example of how forests were defined under the Kyoto Protocol.<sup>41</sup>

### Box 4. Defining "Forest" Under the Kyoto Protocol

The criteria below define "forest" under the first Commitment Period of the Kyoto Protocol:

- Minimum area: 0.05 – 1.00 ha
- Minimum crown cover: 10 – 30%
- Minimum potential height: 2 – 5m

<sup>40</sup> Under the UNFCCC, countries are to select their own definition of forest to be used in constructing forest reference emissions levels and to explain "a difference with the definition of forest used in the national greenhouse gas inventory or in reporting to other international organizations, an explanation of why and how the definition used in the construction of forest reference emission levels and/or forest reference levels was chosen." UNFCCC Decision 12/CP.17 Annex "Guidelines for submissions of information on reference levels."

<sup>41</sup> UNFCCC Decision 11/CP.7, Annex 1(a), at 58 URL: <http://unfccc.int/resource/docs/cop7/13a01.pdf#page=54>

- Young forests with potential to meet the above 3 criteria
- Areas forested before 1990

Within the overall area eligible for incentive allocation, forest areas with high carbon stock or high biodiversity or other value may be targeted for incentive allocation, especially if the continued existence of the forest is threatened. Opportunity costs will also need to be taken into account however, as outlined in Step 3.

Before areas can be prioritized, land and forest rights may also need to be clear for allocation of incentives to forest owners and stewards as outlined in the following subsection.

### 2.2.1 *Identify rights over forests and forest carbon*

Land tenure security has been defined as “the certainty that a person’s rights to land will be recognized by others and protected in cases of specific challenges.”<sup>42</sup> In rural areas in many REDD+ countries land rights are not clearly or validly vested in local users, and land use arrangements are poorly defined and recorded.<sup>43</sup> This can result in numerous problems as described in Box 5.

#### **Box 5: Land Rights Security and REDD+ Incentives**

Lack of land tenure security can cause confusion over potential REDD+ benefits and thus increased risks while often leaving forest users no legal basis to invest in REDD+ activities.<sup>44</sup>

Inconsistencies between statutory and customary rights can complicate the process of securing claims or managing sites. Where customary rights are not legally recognized, actors may choose not to implement REDD+ activities or claim incentives for fear of being forced to forfeit their land to a party with stronger legal authority.

Though insecure forest tenure has long been associated with deforestation and forest degradation, secure tenure may have similar impacts where policy and/or market incentives do not support forest conservation, e.g., where tenure security provides privileged commercial access to forests and associated forest conversion.<sup>45</sup>

To ensure that current or future incentive allocation arrangements enable appropriate actors to benefit from REDD+, an assessment should be made of both statutory and customary land-use rights, including identification of whether local communities’ and indigenous groups’ rights are recognized and protected.<sup>46</sup>

Information on community land and ownership rights should be gathered and potential barriers to effective enforcement of those rights assessed.<sup>47</sup> This information can be used to

<sup>42</sup> FAO (2002) What is land tenure in land tenure and rural development in “Land Tenure Studies 3.”

<sup>43</sup> Costenbader, J. “Benefit Sharing,” in Costenbader, J. (Ed.) (2009) Legal Frameworks for REDD. Design and Implementation at the National Level, p.15. IUCN, Gland, Switzerland.

<sup>44</sup> Id.

<sup>45</sup> Rothe, A. and Munro-Faure, P. Policy Brief No. 6: Tenure and REDD+ Developing enabling tenure conditions for REDD+. UN-REDD, Geneva, Switzerland, at 2.

<sup>46</sup> See id., at 5.

<sup>47</sup> PricewaterhouseCoopers (2012) *supra* note **Error! Bookmark not defined.**, at 64.

design incentive allocation strategies that involve marginalized groups in the decision-making process.<sup>48</sup>

Participatory mapping methods, such as FAO's Participatory Negotiated Territorial Development (PNTD), analyze and map tenure systems, including customary tenure, property rights and patterns of natural resource use.<sup>49</sup> Determination of land tenure rights and any conflicts should also be informed by spatial data.<sup>50</sup>

In some cases, land tenure reform, although typically a lengthy process, may be required for REDD+ implementation. Cross-sectoral coordination may also be necessary to resolve inconsistencies between land and forest policies and land registries can help avoid tenure disputes when allocating incentives.<sup>51</sup>

Countries may improve land tenure security and prevent land use conflicts by delineating land eligible for direct REDD+-related activities, establishing legislative criteria for prioritizing competing land uses and providing mechanisms to avoid or resolve conflicts.<sup>52</sup> Additionally, countries may decide to clarify carbon rights, as described in Box 6.

#### Box 6: Forest Carbon Rights

Ownership of forests does not necessarily translate to a legal right to the benefits of the forest's carbon storage or sequestration capacity.<sup>53</sup> Having "carbon rights" involves both a property right to the sequestered carbon (i.e. carbon physically contained in land, trees and soil), and more importantly the right to benefit from storing or sequestering that carbon.<sup>54</sup>

Where there is no explicit law establishing rights to sequestered carbon, contracts should be used to clarify forest carbon rights and responsibilities, and a limited *usufruct* right may be granted to a party other than the land or forest owner to use or enjoy the underlying resource, activity or related benefits.<sup>55</sup>

However, pursuit of legislative or regulatory measures to ascertain or provide for carbon rights may not be required in many cases. As such, jurisdictions should consider the costs and benefits of clarifying carbon rights before taking action.

### 2.3 Who are the responsible actors and eligible entities?

The actors responsible for addressing and mitigating negative drivers or enhancing positive drivers of forest change at different levels should be considered in determining where incentives are to be allocated. Possible recipients include:

- Government (including national, sub-national, local)
- Different economic sectors (e.g., forestry, agriculture, energy and mining)
- Local communities

---

<sup>48</sup> Id.

<sup>49</sup> Rothe, A. and Munro-Faure, P. *supra* note 45, at 7.

<sup>50</sup> Id. at 9.

<sup>51</sup> Id.

<sup>52</sup> Costenbader, J. (Ed.) 2009, *supra*.

<sup>53</sup> Luttrell, C. et al. (2013), *supra*.

<sup>54</sup> Id.

<sup>55</sup> Takacs, D. (2009). "Forest Carbon – Law and Property Rights". Conservation International, Arlington VA, USA. URL: [http://www.conservation.org/Documents/CI\\_Climate\\_Forest-Carbon\\_Law-Property-Rights\\_Takacs\\_Nov09.pdf](http://www.conservation.org/Documents/CI_Climate_Forest-Carbon_Law-Property-Rights_Takacs_Nov09.pdf), at 15-17.

- Private land owners
- Private companies
- Individuals
- Non-Governmental Organizations<sup>56</sup>

Of the above, national and sub-national governments are the primary agents of REDD+ governance and are major landowners in many tropical forest countries.<sup>57</sup> In addition to resources for implementation of PAMs, they may require support for REDD+ policy and legislative development and also REDD+ administration, monitoring and enforcement.<sup>58</sup>

Private landowners, companies and communities may require incentives that cover not only implementation and transaction costs, but also opportunity costs associated with forest conservation (see Step 3 for discussion of costs). Alternatively, incentives could also be applied to precipitate shifts in private sector behavior, such as through provision of grants to undertake feasibility studies concerning zero-deforestation commitments.

Where landholders are the main actors in the system, allocation of the majority of incentives to them as the managers of land and forests is likely to be most effective. This could be done through shifts in subsidy regimes to encourage forest conservation and intensification of agricultural production as opposed to clearance of forest areas.

Given the importance of specific economic sectors in driving deforestation and degradation e.g., the agriculture, energy or mining sectors, incentives could be applied in an effort to reduce emissions. However, revenues associated with activities in these sectors and opportunity costs may be well in excess of resources likely to be available through REDD+. Therefore, incentives are only likely to be effective if applied in support of other initiatives aiming to reduce deforestation and degradation such as sustainable product certification, or where used to advance corporate sustainability commitments, such as through provision of grants for environmental and social impact assessments.

NGOs could potentially provide technical assistance and implementation support for many aspects of REDD+, particularly in relation to community development, private sector engagement at the local level, extension of low emissions agricultural practices, biodiversity conservation and monitoring. Box 7 outlines division of incentives between levels in different countries.

#### **Box 7: Incentive Allocation Schemes in Brazil, Vietnam & Papua New Guinea**

Countries vary in their incentive allocation between national, subnational and project-level. A February 2014 proposal of six Brazilian Amazon states suggests allocating 20% of REDD+ finance to the Brazilian federal level and the remaining 80% to the states to manage according to their states plans. In Vietnam, Decision 380 on PES Pilot Projects (2008) allocates 90% of the benefits to people conserving the forest and 10% for administration. The proposed incentive-sharing arrangements for the first official REDD+ pilot project in Papua New Guinea, April Salumei, apportion 65% of incentives to landowners, 15% to the state and 20% to the developer.

<sup>56</sup> Broadhead, J. et al. (2013) Decision support tool Integrated REDD+ accounting frameworks: Nested national approaches, at 23. USAID LEAF, Washington DC.

<sup>57</sup> Costenbader, J. "Benefit Sharing," in Costenbader, J. (Ed.) 2009. Legal Frameworks for REDD. Design and Implementation at the National Level, p.68. IUCN, Gland, Switzerland. URL : <https://portals.iucn.org/library/efiles/documents/EPLP-077.pdf>

<sup>58</sup> Id.



Sources: Cenamo (2014); Pham et al. (2012); Babon and Gowae (2013).

Difficult decisions may be faced where actors responsible for forest change are not deemed eligible to receive incentives (e.g., loggers responsible for forest degradation or local communities protecting forests that are not threatened). If, an incentive system includes law-breaking citizens and excludes those abiding by the law, ‘moral hazard’ could result and groups may begin deforesting to access benefits.<sup>59</sup> Conversely, additionality may be lost if incentives are allocated to activities that would have occurred anyway, as occurred under Costa Rica’s Payments for Ecosystem Services (PES) program where incentives were sought by landowners who may have conserved forest anyway.<sup>60</sup> In such situations, satisfaction from already positive behavior can also be reduced, resulting in contradictory outcomes.<sup>61</sup>

In weighing emissions reductions with other environmental and social objectives and addressing the issues outlined above, a “stock and flow” approach may be adopted whereby incentives are divided between actors and activities that directly address negative drivers (i.e., flow) and those which focus on conservation and governance of standing forest (i.e., stock).<sup>62</sup> Whether such an approach is adopted or not, it will probably be necessary to allocate incentives to a spectrum of entities to achieve REDD+ objectives.

## Outcomes of Step 2

On completion of Step 2, the following should be available:

- **Statement of the agreed incentive allocation approach**
- **Description of areas eligible for incentives**
- **Summary of responsible actors linked to positive and negative drivers**
- **PAM options revised according to incentives allocation approach, eligible areas and responsible actors.**

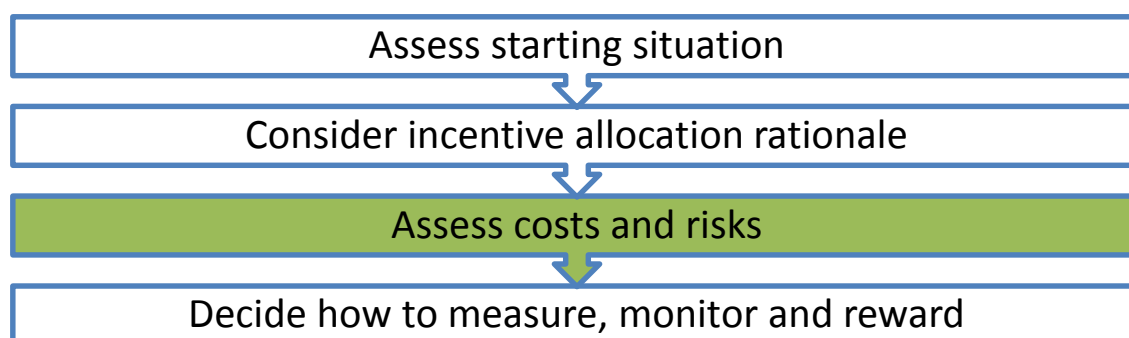
<sup>59</sup> Moral hazard refers to the “risk or probability of loss or injury, esp. a loss or injury covered by an insurance policy.” (Black’s Law Dictionary, 7th Ed: 2009).

<sup>60</sup> Gregersen, H. et al. (2010) Does the Opportunity Cost Approach Indicate the Real Cost of REDD+? Rights and Realities of Paying for REDD+, at 8. CIRAD, Washington DC; See also Kaimowitz, D. (2008) The prospects of deforestation research for policies to promote REDD. CIFOR, Bogor, Indonesia.

<sup>61</sup> Kerr, J. et al. (2012) Prosocial behavior and incentives: Evidence from field experiments in rural Mexico and Tanzania. *Ecological Economics* 73 (2012) 220–227.

<sup>62</sup> See Torres, A. and Skutsch, M. (2014) Challenges for pro-poor benefit sharing mechanisms in the implementation of REDD+ in Mexico, p.20. IUCN, San José, Costa Rica. See also, UN-REDD (2010) Design of a REDD-Compliant Benefit Distribution System for Viet Nam, at 104-107.

### 3 Assess costs and risks associated with potential strategies



In establishing a REDD+ incentive allocation system, the various potential costs at each level of implementation associated with PAM options should be assessed to provide an estimate of the total cost of a given strategy.<sup>63</sup> These can be broken down into opportunity costs, transaction costs, and implementation costs.<sup>64</sup>

Opportunity costs are relevant where incentives are allocated to those whose behavior a given intervention is intended to change. However, finance will also need to support transaction and implementation costs, which are likely to be largely borne by governments in the early years of REDD+.

Altogether, a total estimate of the opportunity, transaction, and implementation costs at national, subnational, and local levels can be used to assess the level of finance needed, including incentives, to achieve a given emissions reduction level. In assessing overall costs, any related income or costs from agriculture, forest and non-timber forest products should also be identified and considered.<sup>65</sup> Other factors that need to be considered include the following:<sup>66</sup>

- **Changing costs:** opportunity costs in particular are dynamic due to fluctuations in global and regional markets for alternative land uses.
- **Difficulties in generalizing figures:** Differences in macro and micro level cost estimations can undermine attempts to estimate costs for activities at a local scale based on national or regional estimates, and vice versa.
- **Imperfect information:** Many remote areas are outside an established market system and opportunity cost estimates may be difficult to gather; in other areas, businesses may not be willing to share information on their opportunity costs.
- **Over focus on opportunity costs:** There is often a tendency to view opportunity costs in isolation of benefits such as enhanced forest governance, strengthened

<sup>63</sup> See, e.g., Angelsen, A. et al. (2012) Analysing REDD+: Challenges and choices. Chapter 8, at 129-151. CIFOR, Bogor, Indonesia, at 115.

<sup>64</sup> Olsen, N. and Bishop, J. (2009) The Financial Costs of REDD: Evidence from Brazil and Indonesia, at ii. IUCN, Gland, Switzerland. URL: [http://cmsdata.iucn.org/downloads/cost\\_of\\_redd\\_full\\_final\\_jan2010.pdf](http://cmsdata.iucn.org/downloads/cost_of_redd_full_final_jan2010.pdf)  
[http://cmsdata.iucn.org/downloads/cost\\_of\\_redd\\_full\\_final\\_jan2010.pdf](http://cmsdata.iucn.org/downloads/cost_of_redd_full_final_jan2010.pdf)

<sup>65</sup> See, e.g., Terra Global Capital, "Defining Components of National REDD+ Financial Planning," (Presentation), at 12. URL: <http://www.catie.ac.cr/prcc/wp-content/uploads/2014/10/4componentes-planificacion-finanzas-redd.pdf>

<sup>66</sup> See generally, Gregersen, H., et al. 2010 "Does the Opportunity Cost Approach Indicate the Real Cost of REDD+: Rights and Realities of Paying for REDD+," Rights and Resources Initiative, Washington, DC., at 1-3.

forest tenure, improved livelihoods and biodiversity conservation and other improvements should be considered.<sup>67</sup>

- **Underestimation of transaction and implementation costs:** Costs of setting up and managing REDD+ systems – in particular governance and implementation costs – can be considerable and may be underestimated.<sup>68</sup>
- **Under focus on potentially simpler opportunities:** Opportunities to protect forests often exist in standing forest-related legislation and simply need to be implemented.<sup>69</sup>
- **Overemphasis on carbon:** Opportunity cost estimation may overlook non-carbon values of forests in determining areas to include.

As REDD+ systems evolve from readiness to piloting to full implementation, finance will need to be allocated differently to national, subnational and/or project levels. The national level is likely to incur costs in early readiness stages but after institutions and PAMs are established, only costs associated with reporting and system management will be incurred. Such costs are also likely to be shared by subnational systems.

### 3.1 What are the expected opportunity costs at each level?

Opportunity costs are the estimated net income lost due to foregoing activities that would have been pursued without the REDD+ intervention (e.g., logging, converting forest to livestock or agriculture).<sup>70</sup> Opportunity costs are generally considered the most important factor in assessing compensation to those undertaking REDD+ activities.<sup>71</sup> Greatly simplified, REDD+ opportunity costs can be estimated as the expected profits lost per hectare by shifting from ‘business as usual,’ divided by the emissions avoided under REDD+ (i.e., the difference in Net Present Value (NPV) between business as usual and the value of the forest carbon per unit emissions avoided).<sup>72</sup> Thus, opportunity cost differs according to the most profitable non-REDD+ land use, the carbon content of the forest, and the current carbon price, as outlined in the example given in Box 8.

Opportunity costs are not relevant where deforestation is forbidden by law.<sup>73</sup> Experts also differ in their assessment of the utility of opportunity cost analysis in calculating actual payments for compensating landholders under REDD+. <sup>74</sup> Global, regional, and subnational-scale analyses typically derive widely divergent opportunity cost estimates, due in part to using different techniques, though the subnational approach using empirical data for carbon

---

<sup>67</sup> See, e.g. Dyer, N. and Counsell, S. 2010. “McREDD: How McKinsey ‘cost curves’ are distorting REDD+,” Rainforest Foundation, at 7. URL: <http://www.illegal-logging.info/sites/default/files/uploads/McReddEnglish.pdf>

<sup>68</sup> Id.

<sup>69</sup> Id.

<sup>70</sup> White, D. (2012) Transaction and Implementation Costs of REDD+, at 18. FCPF.

<sup>71</sup> World Bank, Estimating the Opportunity Costs of REDD+: A Training Manual, (2012), at 1-9. URL:

<https://forestcarbonpartnership.org/sites/forestcarbonpartnership.org/files/Documents/PDF/July2012/OppCostsREDD+v1.3-2011.03.11.pdf>

<sup>72</sup> White, D. and Minang, P. (eds.), Estimating the Opportunity Costs of REDD+: A Training Manual, (2012), World Bank, at 1-15. URL:

<https://forestcarbonpartnership.org/sites/forestcarbonpartnership.org/files/Documents/PDF/July2012/OppCostsREDD+v1.3-2011.03.11.pdf>

<sup>73</sup> Gregersen, H. et al. (2010) Does the Opportunity Cost Approach Indicate the Real Cost of REDD+? Rights and Realities of Paying for REDD+, at 5. CIRAD, Washington DC.

<sup>74</sup> Compare Fisher, B. et al. (2011) Implementation and opportunity costs of reducing deforestation and forest degradation in Tanzania. *Nature Climate Change* 1, 161–164 (2011) doi:10.1038/nclimate1119 (finding payments compensating landholders’ opportunity costs grossly underestimated their needs); with Gregersen, H., et al. 2010 “Does the Opportunity Cost Approach Indicate the Real Cost of REDD+: Rights and Realities of Paying for REDD+,” Rights and Resources Initiative, Washington, DC., 1-3. URL: [http://www.forestforclimate.org/attachments/1068\\_doc\\_1555.pdf](http://www.forestforclimate.org/attachments/1068_doc_1555.pdf)

density and per-area opportunity costs has been recommended for country-level estimation.<sup>75</sup>

#### Box 8: Opportunity Cost Estimation in Cambodia<sup>76</sup>

In 2011, a team of researchers from the Center for Clean Air Policy studied the viability of REDD+ in the Koh Kong Coastal Lowlands area of Cambodia. The team estimated the 20-year NPV from five main crops in the study area (timber, soybean, maize, sugar cane, and rubber) under three scenarios of economic growth. Soy had the lowest NPV (\$3,000) and rubber the highest (\$10,000), with maize and sugar falling in between. Based on an estimate of the carbon stock enhancement potential in the target area, the team judged that 70% of the pre-logging forest carbon content could be recovered over 30 years, which would lower opportunity costs of REDD+. Though the study suggested avoiding areas with very high opportunity costs (e.g., mining and palm oil), it also recommended forest rehabilitation and regeneration to reduce REDD+ opportunity costs.

### 3.2 What are the expected transaction and implementation costs at each level?

**Transaction costs** are associated with enabling a REDD+ transaction to occur but do not directly induce reductions in deforestation or forest degradation. These generally consist of:

- (i) *information-related costs* (for buyers and sellers to discover and inform each other of the offer and its terms);
- (ii) *costs of bringing parties together* (including costs of an organized market if many parties);
- (iii) *bargaining costs* (including negotiating and drafting a contract); and
- (iv) *enforcement costs* (including routine inspection).<sup>77</sup>

National and subnational government agencies incur transaction costs, as do some individual groups, e.g., companies, NGOs or communities distributing funds to individual landowners or REDD+ participants. Transaction costs can be high where incentives are distributed directly to landowners, or go through multiple administrative bodies before reaching beneficiaries. Elements of transaction costs include the following:

#### Start-up:

- Developing framework for receiving and managing finance
- Consultation and participation
- Reviewing forest policy and legislation
- Establishing standards (e.g., safeguards, additionality, MRV)
- Developing baseline and reference emission levels
- Piloting
- Documentation and fees

#### Ongoing:

- Contract management

<sup>75</sup> World Bank, (2011) *Estimating the opportunity costs of REDD+: A training manual*. URL: <http://wbi.worldbank.org/wbi/Data/wbi/wbicms/files/drupal-acquia/wbi/OppCostsREDD+manual.pdf>, pp. 1-26-29.

<sup>76</sup> Cambodia: A Case Study of Deforestation and Opportunity Costs in Koh Kong Province, at 11-21. URL: [https://forestcarbonpartnership.org/sites/forestcarbonpartnership.org/files/Documents/PDF/July2012/7%20-%20REDD+%20in%20Cambodia%20-%20M.Ogonowski\\_0.pdf](https://forestcarbonpartnership.org/sites/forestcarbonpartnership.org/files/Documents/PDF/July2012/7%20-%20REDD+%20in%20Cambodia%20-%20M.Ogonowski_0.pdf)

<sup>77</sup> See White, D. (2012) *Transactions and implementation costs of REDD+*, Forest Carbon Partnership (presentation). URL: [https://forestcarbonpartnership.org/sites/forestcarbonpartnership.org/files/Documents/PDF/July2012/14%20-%20Transaction%20&%20Implementation%20Costs%20REDD+%20D.White\\_.pdf](https://forestcarbonpartnership.org/sites/forestcarbonpartnership.org/files/Documents/PDF/July2012/14%20-%20Transaction%20&%20Implementation%20Costs%20REDD+%20D.White_.pdf)

- Financial management
- Standards evaluation
- Monitoring, certification and reporting
- Technical assistance<sup>78</sup>

**Implementation costs**, also referred to as administrative costs, are associated with the more permanent features of administering REDD+ PAMs.<sup>79</sup> These costs are likely to be mostly incurred by national and subnational governments and may be associated with the following:

Start-up:

- Capacity building (institutional, human resource; monitoring and evaluation)
- Reforms (tenure, forest policies and legal systems, tax and subsidy reforms)
- Land use planning

Ongoing:

- Administration of forest management (enforcement, reforestation, protection)
- Administering investments in REDD+ related activities (agricultural intensification, sustainable forest management certification)
- Other administration (brokerage, verification, certification, insurance, measurement, monitoring, capacity building, planning, enforcement, reform of rules and regulations)<sup>80</sup>

Due to economies of scale, per unit transaction and implementation costs are generally greater for smaller than larger projects and programs, and increase with greater diversity and complexity of project and program methodologies. For systems in which finance is passed to lower levels (i.e. subnational and project-led approaches), higher levels may charge administrative costs in the form of taxes or fees (see also Box 7).<sup>81</sup> Coordinating tasks centrally could reduce transaction and implementation costs, although inclusiveness and connection with the field may be reduced.<sup>82</sup> As exemplified in Box 9, wide variation exists in REDD+ transaction and implementation costs at national and subnational levels.

### Box 9: Transaction and Implementation Costs in REDD+ Countries

Implementation and transaction costs vary according to the drivers of deforestation, existing capacity to implement and enforce regulations, type of REDD+ activity and type of financing mechanism used.<sup>83</sup> For example, national PES systems often incur implementation costs at the national level and transaction costs at the subnational or project level. The *Fondo Nacional de Financiamiento Forestal* (FONAFIFO) acts as the administrator of Costa Rica's

<sup>78</sup> White, D. (2012) *supra* note **Error! Bookmark not defined.**.. See also, Wang, N. 2003. Measuring Transaction Costs: An Incomplete Survey. Ronald Coase Institute, Working Paper 2. URL: <http://coase.org/w-wang2003measuringtransactioncosts.pdf>

<sup>79</sup> White, D. (2012) *supra* note **Error! Bookmark not defined.**, at 3-8; See also Olsen, N. and Bishop, J. (2009), *supra* note 64, at 13.

<sup>80</sup> IPCC, 2007. URL: <http://www.ipcc.ch/ipccreports/tar/wg3/index.php?idp=33opp>

<sup>81</sup> See generally, Karsenty, A. (2010) Forest taxation regime for tropical forests: lessons from Central Africa. *International Forestry Review*, Vol. 12. pp. 121 – 129. See also, Spratt, S. & Crawford, G. (2013). Researching forest taxation and REDD+ in sub-Saharan Africa. URL: <http://www.ictd.ac/sites/default/files/Files/Forest-Taxation%20and%20REDD%2Bin-sub-Saharan-Africa.pdf>

<sup>82</sup> Wertz-Kanounnikoff, et al. "How can we monitor, report and verify carbon emissions from forests?" in *Moving Ahead with REDD: Issues, Options and Implications*. (2008) Angelsen, A. (ed.) at 97.

<sup>83</sup> *Id.*, at 13.

*Pago por Servicios Ambientales* system and retains 1% of all initial payments under contract to cover administrative costs.<sup>84</sup> However, local forest regents (third-party verifiers) bear most of the system's transaction costs (e.g., monitoring, reporting and evaluation) and often work for up to 15% of future payments.<sup>85</sup>

Similarly, the Central Forest Protection Development Fund (FPDF) acts as the administrator of Vietnam's Payments for Forest Environmental Services system and retains 0.5% of revenues generated to cover administrative costs (e.g., costs of trust, activities to receive and manage finance).<sup>86</sup> Provincial FPDFs may retain up to 10% of revenues generated to cover transaction costs (e.g., costs of activities to receive payments, checking, supervision and auditing; monitoring quality and payment of forest environmental services at district, commune and village levels).<sup>87</sup> However, of the 10% collected by provincial FPDFs, 5% must be set aside in a contingency fund to support households, individuals and village communities contracted for long-term forest protection in case of drought or other disaster.<sup>88</sup>

National funds such as the Amazon Fund in Brazil distribute payments directly to projects and incur both implementation and transaction costs at the national level. The Amazon Fund retains 3% of funds to cover implementation and transaction costs, which experts have found too low to cover the full costs of administration.<sup>89</sup>

### 3.3 What are the main risks and how should they be minimized?

Various types of risk are typically considered in the development of forest carbon projects, including:<sup>90</sup>

1. *political and governance risk*, including war, expropriation and currency transfer;
2. *program design and strategy*, covering the risk of the program from reversals due to its not addressing deforestation and degradation drivers;
3. *carbon rights and use of carbon revenues*, capturing stakeholders' ownership and revenue interests in the carbon asset (including title risk);
4. *funding risk*, indicating the risk of financial failure potentially resulting in reversals (including market and financial risk); and
5. *natural risk*, capturing its frequency and significance (e.g., fire, pests, droughts, hurricanes).

In designing a country level REDD+ incentive allocation system, many of these risks will either have been considered and mitigated by projects or will be under the control of the government as a key stakeholder in the national system.

In multilevel REDD+ systems, risks associated with working across national and subnational programs, projects and initiatives need to be given particular attention. These include risks associated with domestic leakage and reversals, i.e., where some projects subnational jurisdictions do not achieve emissions reduction targets while others do. These can be

<sup>84</sup> FONAFIFO Manual de Procedimientos Para el Pago de Servicios Ambientales. 2009.

<sup>85</sup> FONAFIFO, CONAFOR and Ministry of Environment (2012) Lessons Learned for REDD+ from PES and Conservation Incentive Programs Examples from Costa Rica, Mexico and Ecuador, at 106.

<sup>86</sup> Vietnam Decree on the Policy for Payment for Forest Environmental Services 24-09-2010. Art. 15(1)(a). URL: <http://www.vietnamforestry.org.vn/mediastore/fsspc/2014/12/02/99.2010.ND.CP.pdf>

<sup>87</sup> Id. at Art. 15(2)(a).

<sup>88</sup> Id.

<sup>89</sup> Forstater, M. et al. (2013) The effectiveness of climate finance: a review of the Amazon Fund, at 3. Overseas Development Institute, London.

<sup>90</sup> Risks 1-5 are based on *Verified Carbon Standard* Jurisdictional and Nested REDD+ (JNR) Non-Permanence Risk Tool.

partially mitigated through due diligence and independent verification but in some situations performing projects or jurisdictions will need to be compensated when emissions at the national level have not been reduced relative to the reference level or have been reduced by a smaller amount than necessary to compensate performing areas. As such, it may be necessary to maintain buffers and/or establish other risk mitigation measures and these will need to be aligned with the incentives allocation framework.

Governments can best manage the bulk of multilevel REDD+ system liabilities but liability for non-performance should not be completely removed from actors whose performance is necessary for the success of REDD+. The private sector should, however, only be delegated risks they are able to manage otherwise their capital costs will rise to the point they will not be able to do business.<sup>91</sup> In general, higher risk projects will need to pay a greater premium to attract incentives, or agree to fewer incentives following performance. Where vulnerable sections of the population are involved, risk mitigation and incentive allocation strategies must endeavor to provide protection. Taking these constraints into account, risk mitigation measures should be harmonized with incentive allocation.

Risks can be allocated internally whereby the government guarantees incentives to all performing subnational projects or jurisdictions regardless of national level performance and with no incentive allocation to non-performing entities. Alternatively, subnational projects or jurisdictions can assume risk for under-performance such that performing entities within the national system are compensated for their efforts. Other methods of allocating risk internally include:

1. *Creation of reserve accounts*, or ‘buffers,’ in which a portion of incentives received are retained in national and subnational accounts to be utilized when one level performs and the other does not. In such cases, either full or partial reimbursement could flow from the non-performing level to the performing level.
2. *Purchase of replacement emissions reductions*, whereby non-performing national and subnational level actors can purchase replacement REDD+ emissions reductions from other countries or subnational levels to cover a shortfall.
3. *Contractual provisions on liability*, for underperformance or inability to perform due to exogenous event (e.g., *force majeure* clauses in cases of natural disaster or expropriation).<sup>92</sup> Such provisions should define triggering events and what happens when the event occurs.<sup>93</sup>

Risks also can be mitigated externally through insurance provided by government or the private sector, and through loan guarantees whereby lenders’ risks can be reduced to help secure financing. Governments or multilateral agencies generally provide loan guarantees, which can cover risks from non- or under-performance of government programs, policies, or contracts.

---

<sup>91</sup> Id.

<sup>92</sup> Nested Approaches to REDD+, at 17. See also, van Noordwijk, M. et al. (2008). Reducing emissions from deforestation and forest degradation (REDD) in Indonesia: options and challenges for fair and efficient payment distribution mechanisms, at 19. Working Paper 81. Bogor, Indonesia: World Agroforestry Centre (ICRAF).

<sup>93</sup> See KMStandards, LLC. 2014. “Force Majeure.” Contract Standards (online). URL: <http://www.contractstandards.com/clauses/force-majeure> (“Under most national laws, force majeure events must meet four criteria: (1) the event must be external to the contract and the parties; (2) the event must render the party’s performance radically different from what the parties originally contemplated; (3) the event must have been unforeseeable; and (4) the occurrence of the event must be beyond the control of the party seeking to use force majeure as an excuse for non-performance.”)



Table 2 summarizes four incentive allocation scenarios possible in an integrated REDD+ system. Risk mitigation measures are relevant where one level performs and the other does not (i.e., top right and bottom left in table).

**Table 2: Incentive Allocation Scenarios in an integrated REDD+ System<sup>94</sup>**

	<b>Subnational/Project-Level Performs</b>	<b>Subnational/Project-Level Does Not Perform</b>
<b>National Level Performs</b>	Incentives allocated correspond to performance at both national and subnational/project-level.	Incentives allocated to national level correspond to performance, but no incentives are allocated to subnational/project level. One or more risk mitigation mechanism covers incentives to national level in place of subnational/project underperformance.
<b>National Level Does Not Perform</b>	No incentives allocated to either national or subnational/project-level. One or more risk mitigation mechanisms cover incentives to subnational/project in place of national level underperformance.	No incentives allocated.

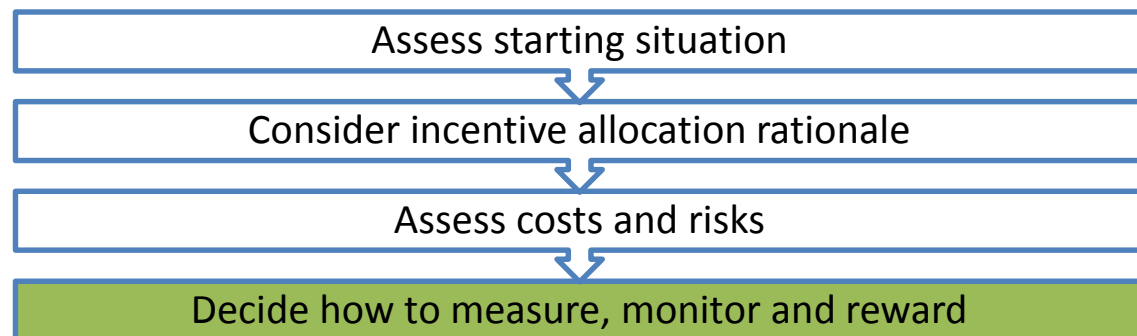
### Outcomes of Step 3

On completion of Step 3, the following should be available:

- Expected costs at each level of implementation associated with PAM options
- PAM options revised according to costs assessment
- Plan for assigning and/or mitigating REDD+ risks and non-performance liabilities

<sup>94</sup> Adapted from Cortez, R. et al. (2010). A Nested Approach to REDD+. The Nature Conservancy and Baker & McKenzie, LLP, at 20.

## 4 Consider how to monitor, measure and reward performance



A robust monitoring, measurement, reporting and verification (MMRV) system will be essential for ensuring long-term REDD+ performance and maintaining the confidence of donors and investors. The system should be connected to national or subnational REDD+ registries to enable tracking of performance. If possible the MMRV framework should be based on existing systems, but if none are suitable then new ones may be established.<sup>95</sup>

In addition to monitoring and measuring performance in relation to forests and emissions, stakeholder input should be incorporated to help assess environmental and social impacts, and to ensure that incentives are being received.<sup>96</sup> Such information can be gathered through multi-stakeholder workshops including CSOs and local forest communities. In internationally funded REDD+ systems, the involvement of independent parties will generally be necessary to ensure the verification mechanism is fully functional and free of undue interference.<sup>97</sup>

### 4.1 How will performance be monitored and/or measured?

In designing the MMRV system, it will be necessary to decide what will be monitored and measured, and how incentives will be associated with the chosen indicators. Although the ultimate goal of REDD+ is to reduce emissions from forests and increase removals of carbon, measuring and attributing emissions to e.g. local land owners is likely to be excessively complex and can only take place after the event, which may discourage investment in initial activities to reduce emissions. Moreover, for a reference level to be meaningful, spatial aggregation at scale above that of single land owners is likely to be necessary unless probabilities of different REDD+ activities occurring can be made spatially explicit, which is likely to be a complex and controversial task.

To overcome these problems, proxies such as the area of forest regularly patrolled by rangers or the area regenerated may be monitored, and an estimate used of eventual emissions reduction and/or removals relative to the reference level.<sup>98</sup> The efficiency of incentives in achieving emissions reduction could then be assessed to help further hone the incentive allocation approach and associated PAMs.

<sup>95</sup> See Trémolet, S. (2011), *Scaling up Rural Sanitation: Identifying the Potential for Results-Based Financing for Sanitation*, Water & Sanitation Program, at 20. World Bank Water and Sanitation Program, at 21. URL: <http://www.wsp.org/sites/wsp.org/files/publications/WSP-Tremolet-Results-Based-Financing.pdf>, at 21.

<sup>96</sup> PricewaterhouseCoopers (2012), *supra* note **Error! Bookmark not defined.**, at 58.

<sup>97</sup> *Id.*

<sup>98</sup> Angelsen, A., et al., 2009. *Reducing Emissions from Deforestation and Forest Degradation (REDD): An Options Assessment Report*, Meridian Institute, at 4,6. URL: [http://www.redd-oar.org/links/REDD-OAR\\_en.pdf](http://www.redd-oar.org/links/REDD-OAR_en.pdf)

For PAMs and REDD+ activities that are not spatially explicit it may be difficult to precisely assess precise impacts on emissions reduction, and these may therefore have to be incentivized according to different performance metrics. Similarly, policies enacted, rules enforced, stakeholder consultations carried out, or pilot demonstrations conducted may also be supported (particularly during the early stages of REDD+), but are unlikely to be incentivized according to associated emissions reduction performance.<sup>99</sup>

Given the wide range of activities that could be supported to reach REDD+ objectives, some closely linked to emissions reduction and removals and others less so, a variety of performance indicators could be employed during different stages of REDD+ or at different levels within the national system.

#### 4.1.1 *Decide what performance indicators will be used*

Performance indicators may be grouped into the following categories:

- (a) *inputs* (e.g., funds spent, technical assistance provided);
- (b) *activities* (e.g., PAMs implementation progress, activities performed);
- (c) *outputs* (e.g., PAMs implementation completed, forest area under sustainable forest management certification);
- (d) *outcomes* (e.g., deforestation rate reductions, reductions in unsustainable timber harvest); and
- (e) *impacts* (e.g., tons of carbon emissions reduced).

At the lower end of the scale (i.e., inputs and activities), the chance of unforeseen events is lower and recipients are therefore likely to be exposed to less risk. However, use of lower level indicators is generally more restrictive and provides limited scope for novel solutions to achieve impacts.<sup>100</sup> Low-level indicators can also foster perverse outcomes based on proxy statistics rather than impacts.<sup>101</sup> Additionally, excessive focus may be given to the indicator while fundamental reforms needed for long-term change are overlooked.

Conversely, indicators at the higher end of the scale above provide a better measure of performance in terms of REDD+ objectives although are more difficult to measure.<sup>102</sup> Significantly, in moving from the lower to the higher end of the scale the importance of three factors increases:

1. *time lags* between actions incurring costs and incentives received in return for performance increases and this may impede actors' ability to engage;
2. *attribution of results* (i.e., linking observed changes to interventions) becomes more difficult due to the increased involvement of external factors; and
3. *reliability of information* decreases as information gathering becomes more complicated.<sup>103</sup>

In integrated REDD+ systems, different indicators might be used at different levels depending on monitoring capacity and the ability of actors involved to take risks and carry costs. For example, at the local level, inputs and activities may be the most appropriate

---

<sup>99</sup> Wertz-Kanounnikoff, S. and Angelsen, A. 2009. "Global and National REDD+ Architecture: Linking Institutions and Actions." in *Realising REDD+: National Strategy and Policy Options*. Angelsen, A., and Brockhaus, M. (ed.) CIFOR, at 18.

<sup>100</sup> See Tremolet 2011, *supra* note 95, at 20.

<sup>101</sup> Wertz-Kanounnikoff and McNeill (2012). "Performance indicators and REDD+ implementation," pp. 233-246, at 237. in *Analysing REDD+: Challenges and Choices*, Angelsen, A., et al. CIFOR.

<sup>102</sup> *Id.*

<sup>103</sup> *Id.*

performance indicators while at higher levels outputs and outcomes could be increasingly used. Table 3 shows performance indicators used during different stages of REDD+ under Norwegian bilateral agreements.

In forest carbon projects, impacts (i.e., emissions reduction against a reference level) are commonly used as a performance indicator and could also be used for subnational jurisdictions where sufficient capacity exists. As the agreed national level performance indicator under the UNFCCC, emissions reductions would serve to reduce risk at the national level if also used to measure performance at lower levels. Using emissions reductions would also provide a metric against which subnational governments could be compared and rewarded, in a similar way to projects, to help optimize performance. Such an approach would be especially relevant where land use decisions are also made at the subnational level.

**Table 3: Performance Indicators in Norwegian Contracts**

	Readiness	Pilot Testing	Results-Based Payments
Measurement Indicator	Inputs & Activities	Activities and Outputs	Outcomes & Impacts
Payment basis	Build capacity & prepare REDD+ actions	Policy reforms	Emissions Reductions
Norwegian Bilateral Agreements	Tanzania Indonesia	Guyana Indonesia	Guyana Indonesia Brazil

Source: Angelsen (2014)

## 4.2 How will incentives and performance be coupled?

Following closely with the preceding sub-step, a decision will need to be made regarding the extent to which incentives will be coupled to emissions reductions or other measures of performance. REDD+ was conceived as a mechanism through which financing would be conditional on performance in terms of emission reduction and although funding has largely followed traditional aid channels during readiness phases, continued decoupling of emissions reductions and finance de-emphasizes the climate change mitigation goals at the heart of REDD+. <sup>104</sup>

At the national level, decision makers will also need to consider how to align multi-level incentive allocation systems towards the ultimate goal of REDD+. Incentives should ideally be provided following performance (ex-post), given the contingent nature of REDD+ agreements and the need to ensure environmental integrity. <sup>105</sup> Coupling incentive allocation and emissions reduction is likely to improve REDD+ effectiveness and efficiency. In many countries, however, directly linking emissions accounting and incentive allocation may be unachievable due to the complexities of accounting for and attributing emissions reduction below the national level, particularly where multiple PAMs acting at different levels are involved.

<sup>104</sup> See Angelsen, A. (2013) Measuring REDD+ Performance. In *Analysing REDD+: Options and Choices*. at 320.

<sup>105</sup> Karousakis, K. (2007). Incentives to reduce GHG emissions from deforestation: lessons learned from Costa Rica and Mexico, at 35. Paris, France: Organisation for Economic Co-operation and Development (OECD).

Additionally, and depending on the need for finance to pay for project or program start-up costs (and depending on agreements with financiers), some portion of payments may be made prior to performance (ex-ante). Small landholders in particular are likely to need upfront finance to cover initial costs. To encourage permanence these could be provided at intervals or a proportion could be tied to impacts and given at a later date.<sup>106</sup> After an initial cycle of funding to initiate REDD+ programs and PAMs during the early years of REDD+, incentives received can re-pay upfront costs and may be sufficient to help finance the next cycle.

### 4.3 How will performance be rewarded?

Like payments for ecosystem services (PES), REDD+ has been often been associated with direct payments to landholders or entities involved in projects and programs. To reward performance, however, a variety of incentives including tradable credits, monetary payments or in-kind good and/or services may be used at different levels and for different actors and activities, as follows:

- (a) **Tradable credits**
- (b) **Direct monetary payments**
  - 1. Cash in hand
  - 2. Payments to bank account (or via mobile device to remote areas)
- (c) **In-kind goods and/or services**
  - 1. Capacity building
  - 2. Organization strengthening
  - 3. Employment
  - 4. Municipal infrastructure and/or services
  - 5. Land and forest resource access, use rights
  - 6. Information, knowledge sharing
  - 7. Land and resource rights
  - 8. Technical, legal or other assistance

Benefits can also take the form of tax relief, price guarantees, access to loans or microfinance, and support for institutional development, among others.<sup>107</sup> In the absence of global markets for carbon, finance may be difficult to marshal at levels adequate to provide monetary incentives directly to all affected landholders and/or REDD+ participants in quantities sufficient to change behavior in the long term.

In this regard, incentives at scale (i.e., larger payments to groups) rather than small payments to individuals have been found to achieve better overall results and may therefore provide greater impact in the face of scarce financial resources.<sup>108</sup> Additionally, payments in kind including to a group or an entire community may encourage action over wider areas and avoid needs to determine individual landholder rights and activities performed.

Whether payments are made in cash or in kind, decision makers will need to consider how to set rates. Some options include the following:

- Flat rate per ton of carbon or hectare of forest; or
- National formula according to chosen incentives allocation rationale;

<sup>106</sup> See van Noordwijk et al., *supra* note 92, at 21.

<sup>107</sup> PricewaterhouseCoopers (2012) *supra* note **Error! Bookmark not defined.**

<sup>108</sup> O'Sullivan, R., Lee, D., Zamgachian, A. and Durschinger, L. 2013. US Experience on Results-based Finance. USAID-supported Forest Carbon, Markets and Communities Program. Washington, DC, USA at 8. URL: [http://www.fcmglobal.org/documents/Results\\_Based\\_Finance.pdf](http://www.fcmglobal.org/documents/Results_Based_Finance.pdf)

- Price for carbon on international markets;
- Local rates for given inputs, e.g. forest patrolling, tree planting, etc.

Where non-governmental or private entities (including forest enterprises, forest owners and agribusinesses) participate in local level activities, countries could also employ a competitive bidding process for technical advice and training or capacity building and also for emissions reduction provided suitable monitoring protocols are in place.

## **Outcomes of Step 4**

**On completion of Step 4, the following should be available:**

- **Plan for monitoring and measuring performance**
- **List of chosen performance metrics**
- **Rules on how performance of different types will be incentivized**
- **List of incentives to be used for different levels, actors and activities**

## References

### National and International Law and Policy

Indonesia National REDD Strategy (2012).

UNFCCC Decision 1/CP.16

UNFCCC Decision 10/CP.19.

UNFCCC Decision 11/CP.19.

UNFCCC Decision 12/CP.17.

UNFCCC Decision 14/CP.19.

UNFCCC Decision 15/CP.19.

UNFCCC Decision 2/CP.17

UNFCCC Decision 4/CP.15.

UNFCCC Decision 9/CP.19.

Vietnam Decree on the Policy for Payment for Forest Environmental Services 24-09-2010.

### Literature

Angelsen, A. (2013) Measuring REDD+ Performance. In Analysing REDD+: Options and Choices.

Angelsen, A. et al. (2012) Analysing REDD+: Challenges and choices. CIFOR, Bogor, Indonesia.

Angelsen, A., et al., 2009. Reducing Emissions from Deforestation and Forest Degradation (REDD): An Options Assessment Report, Meridian Institute. URL: [http://www.redd-oar.org/links/REDD-OAR\\_en.pdf](http://www.redd-oar.org/links/REDD-OAR_en.pdf)

BMZ, (n.d.) REDD Early Movers (REM) – Rewarding Pioneers in Forest Conservation, at 8. URL: [http://www.bmz.de/en/publications/topics/climate/FlyerREDD\\_lang.pdf](http://www.bmz.de/en/publications/topics/climate/FlyerREDD_lang.pdf).

Boucher, D. 2008. Out of the Woods: A realistic role for tropical forests in Curbing Global Warming. Washington: Union of Concerned Scientists. 33p. URL: [http://www.ucsusa.org/assets/documents/global\\_warming/UCS-REDD-Boucherreport.pdf](http://www.ucsusa.org/assets/documents/global_warming/UCS-REDD-Boucherreport.pdf)

Broadhead, J. et al. (2013) Decision Support Tool for Integrated REDD+ accounting frameworks: Nested national approaches. USAID-LEAF, Washington DC.

Bucki, M. “Addressing risks in REDD+ through carbon payments and buffering rates.” ETFRN News 44: March 2014. URL: [www.etfrn.org/file.php/243/5.3bucki.pdf](http://www.etfrn.org/file.php/243/5.3bucki.pdf)

Busjeet, G. (2010) Planning, Monitoring, and Evaluation: Methods and Tools for Poverty and Inequality Reduction Programs. The World Bank, Washington DC.

Carder, R. (2013) Tenure security and economic interest add up to REDD+ effectiveness – study. CIFOR Blog. URL: <http://bit.ly/1r3FIMd>.

Conservation International, (n.d.) “The nested approach to REDD+ in Peru: readiness and implementation at the subnational level in the region of San Martin as a model.” URL: [http://www.conservation.org/global/peru/publicaciones/Documents/norad\\_nested\\_approach.pdf](http://www.conservation.org/global/peru/publicaciones/Documents/norad_nested_approach.pdf)

Cortez, R. et al. (2010). A Nested Approach to REDD+: Structuring effective and transparent incentive mechanisms for REDD+ implementation at multiple scales. The Nature



Conservancy and Baker & McKenzie, LLP. URL: [http://www.nature.org/media/climatechange/nested\\_paper\\_final\\_60110.pdf](http://www.nature.org/media/climatechange/nested_paper_final_60110.pdf)

Cortez, R. et al. (2010). A Nested Approach to REDD+. The Nature Conservancy and Baker & McKenzie, LLP, at 20.

Costenbader, J. (2011). REDD+ Benefit Sharing: A Comparative Assessment of Three National Policy Approaches. Prepared for the Forest Carbon Partnership Facility and the UN-REDD Programme. URL: <http://tinyurl.com/redd-benefits>

Costenbader, J. (Ed.) (2009) Legal Frameworks for REDD. Design and Implementation at the National Level. IUCN, Gland, Switzerland. URL : <https://portals.iucn.org/library/efiles/documents/EPLP-077.pdf>

Deheza, M. and Bellassen, V. (2012) Delivering REDD+ Incentives to Local Stakeholders: Lessons from Forest Carbon Frameworks in Developed Countries. CDC Climat Research. Paris, France.

FAO (2002) What is land tenure in land tenure and rural development in “Land Tenure Studies 3.”

FCPF (2014) Linking Local REDD+ Experiences to National REDD+ Strategies. World Bank, Jakarta, Indonesia.

Fisher, B. et al. (2011) Implementation and opportunity costs of reducing deforestation and forest degradation in Tanzania. Nature Climate Change 1. URL: doi:10.1038/nclimate1119.

FONAFIFO (2009) Manual de Procedimientos Para el Pago de Servicios Ambientales.

FONAFIFO Website: Environmental Services Payment (PSA) Program. URL: [http://www.fonafifo.go.cr/home/psa\\_eng/index.html](http://www.fonafifo.go.cr/home/psa_eng/index.html).

FONAFIFO, CONAFOR and Ministry of Environment (2012) Lessons Learned for REDD+ from PES and Conservation Incentive Programs Examples from Costa Rica, Mexico and Ecuador.

Forest Carbon Partnership Facility (FCPF). 2012. FAQ about benefit sharing. Background Note on Benefit Sharing for REDD+ regional dialogue, June 2012. Washington, DC: Program on Forests (PROFOR).

Richards, M. (2009) The REDD Opportunities. Scoping Exercise (ROSE): A Tool for Prioritizing Sub- National REDD+ Activities – Case Studies from Ghana, Tanzania, and Uganda. Forest Trends. URL: [http://www.forest-trends.org/publication\\_details.php?publicationID=2431](http://www.forest-trends.org/publication_details.php?publicationID=2431)

Forest Trends. 2013. Advanced REDD+ Finance: Public Private Co-Finance Initiative. URL: [http://www.forest-trends.org/documents/files/doc\\_3853.pdf](http://www.forest-trends.org/documents/files/doc_3853.pdf)

Forstater, M. et al. (2013) The effectiveness of climate finance: a review of the Amazon Fund. Overseas Development Institute, London.

Gebara, M. (2013) Importance of local participation in achieving equity in benefit-sharing mechanisms for REDD+: a case study from the Juma Sustainable Development Reserve. International Journal of the Commons (7) 2: 473-497.

Gregersen, H., et al. 2010 “Does the Opportunity Cost Approach Indicate the Real Cost of REDD+: Rights and Realities of Paying for REDD+,” Rights and Resources Initiative, Washington, DC. URL: [http://www.forestforclimate.org/attachments/1068\\_doc\\_1555.pdf](http://www.forestforclimate.org/attachments/1068_doc_1555.pdf)

Hajek, F. et al. (2011) Regime Building for REDD+: Evidence on Anatomy and Proximate Outcomes from a Cluster of Local Initiatives in South-Eastern Peru. Environmental Science and Policy 14:201-215 cited by Gebara, M. (2013).

- Kaimowitz, D. (2008) The prospects of deforestation research for policies to promote REDD. CIFOR, Bogor, Indonesia.
- Karousakis, K. (2007). Incentives to reduce GHG emissions from deforestation: lessons learned from Costa Rica and Mexico. Paris, France: Organisation for Economic Co-operation and Development (OECD).
- Karsenty, A. (2010) Forest taxation regime for tropical forests: lessons from Central Africa. *International Forestry Review*, Vol. 12.
- KMStandards, LLC. (2014) "Force Majeure." *ContractStandards* (online). URL: <http://www.contractstandards.com/clauses/force-majeure>
- Luttrell, C. et al. (2013) Who Should Benefit from REDD+? Rationales and Realities. *Ecology and Society* 18(4): 52.
- Luttrell, C., L. Loft, M. F. Gebara, D. Kweka, M. Brockhaus, A. Angelsen, and W. D. Sunderlin. 2013. Who should benefit from REDD+? Rationales and realities. *Ecology and Society* 18(4): 52.
- Macrory, R. (2008) *Regulation, Enforcement and Governance in Environmental Law*, Cameron May, London.
- Madeira, E.M., Kelley, L., Blockhus, J., Ganz, D., Cortez, R. and Fishbein, G. 2013. Sharing the benefits of REDD+: Lessons from the field. The Nature Conservancy. Arlington, Virginia.
- McCormick, Mary K. 2009. "Force Majeure Clauses: Buried in the Boilerplate But Important," McCormick International. URL: [http://www.martindale.com/business-law/article\\_McCormick-International\\_707604.htm](http://www.martindale.com/business-law/article_McCormick-International_707604.htm)
- Ogonowski, M. 2011, REDD+ in Cambodia: A Case Study of Deforestation and Opportunity Costs in Koh Kong Province, at 11-21. URL: [https://forestcarbonpartnership.org/sites/forestcarbonpartnership.org/files/Documents/PDF/July2012/7%20-%20REDD+%20in%20Cambodia%20-%20M.Ogonowski\\_0.pdf](https://forestcarbonpartnership.org/sites/forestcarbonpartnership.org/files/Documents/PDF/July2012/7%20-%20REDD+%20in%20Cambodia%20-%20M.Ogonowski_0.pdf)
- O'Sullivan, R. (2011) Nested Approaches to REDD+: An Overview of Issues and Options. *Climate Focus and Forest Trends*. URL: [http://www.climatefocus.com/documents/files/nesting\\_projects\\_and\\_redd\\_briefing\\_document.pdf](http://www.climatefocus.com/documents/files/nesting_projects_and_redd_briefing_document.pdf)
- O'Sullivan, R., Lee, D., Zamgochian, A. and Durschinger, L. 2013. US Experience on Results-based Finance. USAID-supported Forest Carbon, Markets and Communities Program. Washington, DC, USA. URL: [http://www.fcmglobal.org/documents/Results\\_Based\\_Finance.pdf](http://www.fcmglobal.org/documents/Results_Based_Finance.pdf)
- Olsen, N. and Bishop, J. (2009) The Financial Costs of REDD: Evidence from Brazil and Indonesia. IUCN, Gland, Switzerland.
- Pedroni L. et al., A Nested Approach to REDD+: How could it be implemented? in "Pathways for Implementing REDD+", UNEP RISOE Centre (2010).
- Pham, T.T., Brockhaus, M., Wong, G., Dung, L.N., Tjajadi, J.S., Loft, L., Luttrell C. and Mvondo, S.A. (2013) Approaches to benefit sharing: A preliminary comparative analysis of 13 REDD+ countries. Working Paper 108. CIFOR, Bogor, Indonesia.
- Price Waterhouse Coopers (2012) *Assessing Options for Effective Mechanisms to Share Benefits: Insights for REDD+ Initiatives*. Washington, DC: Program on Forests (PROFOR), Washington DC.

Rey, D. et al. (2013) A country-led approach to REDD+ safeguards and multiple benefits. SNV, Ho Chi Minh City.

Rothe, A. and Munro-Faure, P. Policy Brief No. 6: Tenure and REDD+ Developing enabling tenure conditions for REDD+, UN-REDD, Geneva, Switzerland.

Spratt, S. & Crawford, G. (2013). Researching forest taxation and REDD+ in sub-Saharan Africa. URL: <http://www.ictd.ac/sites/default/files/Files/Forest-Taxation%20and%20REDD%2Bin-sub-Saharan-Africa.pdf>

Streck, C. et al. (2012) Implementing REDD+ in Multi-layered Governance Systems: The Nesting of Accounting Systems and Policies.

Technical Guidance for Jurisdictional and Nested REDD+ Programs, this score is applied to Table 1 of the JNR Non-Permanence Risk Tool. URL: [http://www.v-c-s.org/sites/v-c-s.org/files/JNR%20Non%20Permanence%20Risk%20Tool,%20v3.0\\_0.pdf](http://www.v-c-s.org/sites/v-c-s.org/files/JNR%20Non%20Permanence%20Risk%20Tool,%20v3.0_0.pdf), at 6.

The World Bank (2007) Tools for Institutional, Political and Social Analysis of Policy Reform A Sourcebook for Development Practitioners. The World Bank, Washington DC.

The World Bank (2007) Tools for Institutional, Political and Social Analysis of Policy Reform A Sourcebook for Development Practitioners. The World Bank, Washington DC. URL: <https://openknowledge.worldbank.org/bitstream/handle/10986/6652/390220Tools0fo101OFFICIAL0USE0ONLY1.pdf?sequence=1>

The World Bank (n.d.) "World Bank Guarantee Products: IBRD Partial Credit Guarantee (PCG)." Online: <http://siteresources.worldbank.org/INTGUARANTEES/Resources/IBRDPCG01252012.pdf>

The World Bank Institute Worldwide Governance Indicators. URL: <http://data.worldbank.org/data-catalog/worldwide-governance-indicators>

Thoumi, G. et al. 2012. US Government Investments and Policies to Facilitate Forest Carbon Finance and Markets. Forest Carbon Markets and Communities. URL: <http://tinyurl.com/ne3srl2>.

Thuy, P. et al. (2013) Approaches to Benefit Sharing: A Preliminary Comparative Analysis of 13 REDD+ Countries. CIFOR, Bogor, Indonesia.

Torres, A. and Skutsch, M. (2014) Challenges for pro-poor benefit sharing mechanisms in the implementation of REDD+ in Mexico. IUCN, San José, Costa Rica.

Trémolet, S. (2011), Scaling up Rural Sanitation: Identifying the Potential for Results-Based Financing for Sanitation, Water & Sanitation Program. World Bank Water and Sanitation Program. URL: <http://www.wsp.org/sites/wsp.org/files/publications/WSP-Tremolet-Results-Based-Financing.pdf>.

UN-REDD (2010) Design of a REDD-Compliant Benefit Distribution System for Viet Nam.

UN-REDD, Final Report: Analysis of Opportunity Cost for REDD+, UN-REDD Programme. April 2011. URL: [http://vietnam-redd.org/Upload/Download/File/UN-REDD\\_OCA\\_Final\\_Report\\_3211\\_4432.pdf](http://vietnam-redd.org/Upload/Download/File/UN-REDD_OCA_Final_Report_3211_4432.pdf),

United Nations (2005) Free Prior Informed Consent and Beyond: The Experience of IFAD. Department of Economic and Social Affairs Division for Social Policy and Development.

USAID LEAF (2014) Decision Support Tool Identifying and Addressing Drivers of Deforestation and Forest Degradation.

van Noordwijk, M. et al. (2008). Reducing emissions from deforestation and forest degradation (REDD) in Indonesia: options and challenges for fair and efficient payment

distribution mechanisms. Working Paper 81. Bogor, Indonesia: World Agroforestry Centre (ICRAF).

Verified Carbon Standard Technical Guidance for Jurisdictional and Nested REDD+ Programs (forthcoming 2014).

Wertz-Kanounnikoff and McNeill (2012). "Performance indicators and REDD+ implementation," in *Analysing REDD+: Challenges and Choices*, Angelsen, A., et al. CIFOR.

Wertz-Kanounnikoff, S. and Angelsen, A. 2009. "Global and National REDD+ Architecture: Linking Institutions and Actions." in *Realising REDD+: National Strategy and Policy Options*. Angelsen, A., and Brockhaus, M. (ed.) CIFOR.

White, D. (2012) Transaction and Implementation Costs of REDD+, Forest Carbon Partnership Facility. URL:

[https://forestcarbonpartnership.org/sites/forestcarbonpartnership.org/files/Documents/PDF/July2012/14%20-%20Transaction%20&%20Implementation%20Costs%20REDD+%20D.White\\_.pdf](https://forestcarbonpartnership.org/sites/forestcarbonpartnership.org/files/Documents/PDF/July2012/14%20-%20Transaction%20&%20Implementation%20Costs%20REDD+%20D.White_.pdf)

Wong, G. (2013) A global comparative review of REDD+ benefit sharing mechanisms. CIFOR, Jakarta, Indonesia.

World Bank, (2011) Estimating the opportunity costs of REDD+: A training manual. URL: <http://wbi.worldbank.org/wbi/Data/wbi/wbicms/files/drupal-acquia/wbi/OppCostsREDD+manual.pdf>.

Xuan To, P. et al. (2012) REDD+ in Vietnam: Integrating National and Subnational Approaches. Forest Trends Association and Climate Focus, Washington DC.