



THE UNIVERSITY *of* EDINBURGH

Edinburgh Research Explorer

## Finding a path for REDD+ between ODA and the CDM

**Citation for published version:**

Neeff, T, Göhler, D & Ascui, F 2014, 'Finding a path for REDD+ between ODA and the CDM', *Climate Policy*, vol. 14, no. 2, pp. 149-166. <https://doi.org/10.1080/14693062.2013.831289>

**Digital Object Identifier (DOI):**

[10.1080/14693062.2013.831289](https://doi.org/10.1080/14693062.2013.831289)

**Link:**

[Link to publication record in Edinburgh Research Explorer](#)

**Document Version:**

Peer reviewed version

**Published In:**

Climate Policy

**Publisher Rights Statement:**

©Neeff, T., Göhler, D., & Ascui, F. (2014). Finding a path for REDD+ between ODA and the CDM. *Climate Policy*, 14(2), 149-166. 10.1080/14693062.2013.831289

**General rights**

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

**Take down policy**

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact [openaccess@ed.ac.uk](mailto:openaccess@ed.ac.uk) providing details, and we will remove access to the work immediately and investigate your claim.



# Finding a path for REDD+ between ODA and the CDM

Till Neeff<sup>1</sup>, Daniela Göhler<sup>2</sup>, Francisco Ascui<sup>3</sup>

<sup>1</sup> Independent consultant, Metzger Straße 7, 10405 Berlin, Germany

<sup>2</sup> Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Dag-Hammarskjöld-Weg 1-5, 65760 Eschborn, Germany (currently on secondment to the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), Köthener Straße 2–3, 10963 Berlin)

<sup>3</sup> Business School, University of Edinburgh, 29 Buccleuch Place, Edinburgh EH8 9JS, UK

## Abstract

A new financing mechanism known as REDD+ ((reducing emissions from deforestation and forest degradation, and conservation, sustainable management of forests and enhancement of forest carbon stocks) is being established to achieve large-scale reductions in GHG emissions from tropical forestry and land use. Can REDD+ successfully integrate an emphasis on sustainable development benefits (as with Official Development Assistance, ODA) with a focus on delivering emission reductions (as with the Clean Development Mechanism, CDM)? It is argued that there is a real risk that REDD+ will stay too close to ODA and fail to move beyond its ‘readiness’ phase. Moreover, as with the CDM, there could be an over-emphasis on results in terms of emission reductions, which would only make it attractive for a small set of activities in relatively few countries. In order to balance sustainable development with cost-effective emission reductions, REDD+ needs to involve the private sector in project implementation and financing, its rules for reference levels and crediting arrangements need to be flexible, and forest countries need to proactively direct activities.

## Policy relevance

REDD+ has the potential to deliver funding at unprecedented scale for forestry and land use activities in developing countries. However, this will only occur if the mechanism can successfully transition from its current readiness phase (which is similar to ODA) to a results-based REDD+ (which implies similarities with the CDM). A framework for analysing the attractiveness of results-

based REDD+ for both forest and funder countries is provided. It is argued that the interests of forest and funder countries coincide in activities that score well with respect to financing and co-funding requirements, socio-economic impacts, and governance implications, within the context of each forest country's policy environment and capabilities. An early case study of a results-based REDD+ transaction, the Indonesian logging moratorium, suggests this conceptual framework provides an effective decision support tool to help design future REDD+ policy interventions to avoid the various pitfalls of ODA and the CDM.

## **Keywords**

Clean Development Mechanism (CDM); forestry; official development assistance (ODA); REDD+; sustainable development

# 1. Introduction

Reducing emissions in the forestry and land use sector has received much attention in the international negotiations over a post-2012 climate change framework and the emerging national mitigation schemes (Angelsen et al., 2012; Boyle, 2011). Since the 11th Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) in Montreal in 2005, forests have been a prominent feature on the COP agenda, and are now known under the title ‘REDD+’, i.e. reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries (UNFCCC, 2008a, p. 3).

There are high expectations that a REDD+ mechanism will deliver funding for tropical land use and forestry at unprecedented scale (Corbera et al., 2010; Dutschke & Wertz-Kanounnikoff, 2008; Karsenty, 2012). The scope of the mechanism has evolved from originally only targeting deforestation, to including forest degradation and other forest management activities (Pistorius, 2012). Despite the fact that there is (as yet) little certainty over many details of the design of a REDD+ mechanism, or when it may come into effect, one early sign of belief in its potential to effectively reduce emissions at competitive cost (Eliasch, 2008) has been the establishment of the REDD+ Partnership – a club of interested forest countries (i.e. where REDD+ activities will take place) and funder countries (who are expected to provide the bulk of the finance for REDD+) – which has pledged US\$4 billion as interim financing for the period 2010-2012. In addition to considerable bilateral cooperation, a number of multilateral funds have been established to prepare developing countries for participation in the (future) REDD+ mechanism, including the Forest Carbon Partnership Facility’s Readiness Fund, the UN-REDD Programme, the Forest Investment Program, and the Congo Basin Forest Fund (for an overview of the REDD+ funding landscape see Ascui & Rivard, 2011).

The current design of the REDD+ mechanism is analysed in relation to past efforts to reduce deforestation through either international development cooperation for capacity building in developing countries (i.e. ‘aid’ or Official Development Assistance, ODA) or a market-based financing instrument (i.e. the Kyoto Protocol’s Clean Development Mechanism, CDM). It is argued

that the design of a REDD+ mechanism should learn from these examples by combining their strengths and opportunities while mitigating their weaknesses and threats.

A review of the REDD+ literature is presented in Section 2 in order to situate the current and most likely future design of the REDD+ mechanism in relation to ODA and the CDM. In Section 3, a SWOT (strengths – weaknesses – opportunities – threats) analysis is presented regarding how attractive REDD+ is likely to be for forest and funder countries. In Section 4, a case study – the recent Indonesian logging moratorium – is used to illustrate the results of the SWOT analysis. This case has received much attention in international discussions around forest protection and was selected because of its currency and salience in the REDD+ debate as one of the first examples of a results-based REDD+ transaction. In Section 5, the paper concludes with recommendations on how the design of REDD+ could be made more effective in future.

## **2. REDD+, ODA, and the CDM**

This section explains why ODA and the CDM are relevant points of reference for REDD+ before discussing their relationship.

### ***2.1. Past and current approaches to funding emission reductions and development***

A future international REDD+ funding mechanism is expected to achieve significantly more than past efforts to reduce tropical deforestation and improve forest governance (which, from a global perspective, have generally not been regarded as highly effective; see Angelsen et al., 2012; Corbera et al., 2010; Sunderlin & Atmadja, 2009). There is general agreement that the global forest regime has been ineffective and is the result of repeated past failures to negotiate an international forest convention (Davenport, 2005; Humphreys, 2006). National forest programs emerged in the 1990s as a promising framework for forest policy (Pülzl & Rametsteiner, 2002; Rayner & Howlett, 2004) but the level of success varies widely (Colfer et al., 2008; Phelps et al., 2010; Ribot et al., 2006). Similarly, although there have been some positive outcomes there have also been deficiencies in the regional forest law enforcement and governance (FLEG) processes that fight illegal logging (Brown et al., 2008a; Contreras-Hermosilla, 2007; Lawson & MacFaul, 2010) and in forest certification as an alternative market-driven approach (Cashore et al., 2007; Cashore &

Stone, 2012). The current situation is that deforestation rates and greenhouse gas emissions from land use change remain alarmingly high (Food and Agriculture Organization of the UN [FAO], 2010; Intergovernmental Panel on Climate Change [IPCC], 2007). A future REDD+ mechanism should learn from past efforts and experiences (Kanowski et al., 2011), particularly in terms of financing forest protection (Peskest et al., 2011; Streck & Parker, 2012; von Unger et al., 2012), so as not to repeat past failures and mistakes.

A key feature of REDD+ is that it is to evolve through three distinct phases such that countries are expected to progress from a state of 'readiness' in Phases 1 and 2 to 'results-based' REDD+ in Phase 3 (The Meridian Institute, 2009a; NORAD, 2011b). Although the interests of forest country governments and their readiness in terms of technical and governance capacities varies (Estrada et al., 2012), it is clear that most of the REDD+ funding currently relates to Phases 1 and 2. Indeed, no forest country has yet reached Phase 3 (Ascui & Rivard, 2011). There are, as yet, very few concrete proposals regarding how the transition to a results-based payment mechanism might work (examples include Norway's International Climate and Forest Initiative [NORAD, 2011a] and Germany's Early Mover Programme [BMZ, 2012]). Although there has been much work on how to raise and channel the funds for results-based REDD+ (Hamilton, 2009; IWG-IFR, 2009; Neeff & Ascui, 2009; UNFCCC, 2012b), it is unclear how forest countries could spend such funds effectively given the persistence of governance problems, which are well known to be the most important barrier to development in the forest sector more generally (Transparency International, 2011).

The instruments currently being used to achieve Phase 1 and 2 'readiness' include grants, concessional loans, and capacity development through technical assistance, which are typical ODA instruments. It is envisaged that the bulk of REDD+ funding will flow in Phase 3, with the evolution to a results-based allocation of funding and rigorous quantification of GHG emission reductions as a key metric of success. REDD+ will therefore need to have a system for tracking results, i.e. measuring, reporting and verification (MRV), that would go well beyond standard performance management in an ODA context (Seymour & Angelsen, 2012; Wertz-Kanounnikoff et al., 2008).

This emphasis on results-based funding and rigorous quantification of emission reductions draws heavily on the concept of payment for environmental (or ecosystem) services (PES) (Alix-Garcia et al., 2012; Tacconi et al., 2010). However, REDD+ goes beyond PES in its scope. To function successfully, PES schemes typically require certain economic and institutional conditions (Wunder, 2008), including regulatory policies and safeguards (Pistorius et al., 2012). REDD+ would provide financial incentives to reduce greenhouse gas emissions and thus deliver an ecosystem service (through ‘results-based REDD+’), and would create the necessary institutional and governance conditions such as tenure rights, participation of local communities, and policy coherence (through ‘REDD+ readiness’).

The CDM is also similar to a PES mechanism and, in terms of its track record in delivering payments for emission reductions in developing countries, is arguably one of the world’s most innovative and successful examples of such a mechanism to date, (Fuhr & Lederer, 2009; Lederer, 2010; Streck, 2007), with the total investment in registered CDM projects estimated to be \$215 billion in mid-2012 (UNFCCC, 2012a).

However, it has been argued that the contribution of the CDM to sustainable development and reducing emissions has been limited (Karakosta & Marinakis, 2013; Kossoy & Guignon, 2012; Lambert, 2007). In particular, the CDM appears to suffer from unequal regional distribution, with the lion’s share of activities taking place in emerging economies. Less developed countries, which have a much greater need for technical and financial assistance, therefore get sidelined (Karakosta & Marinakis, 2013; Winkelman & Moore, 2011). As a result, the allocation of benefits under the CDM remains biased with respect to specific countries and activities, and the mechanism as a whole falls short of expectations regarding the delivery of sustainable development co-benefits (although the evidence on this front is contested: UNFCCC, 2012a). In addition, most observers agree that the CDM has been particularly ineffective with respect to forestry (Streck & Scholz, 2006). In fact, the exclusion of reduced deforestation from the CDM spurred the original development of REDD+ as a new mechanism to address this major lacuna in the global climate change regime, and numerous lessons for the design of REDD+ can be drawn from the CDM experience (Neeff & Ascui, 2009).

## 2.2. Situating REDD+ in relation to ODA and the CDM

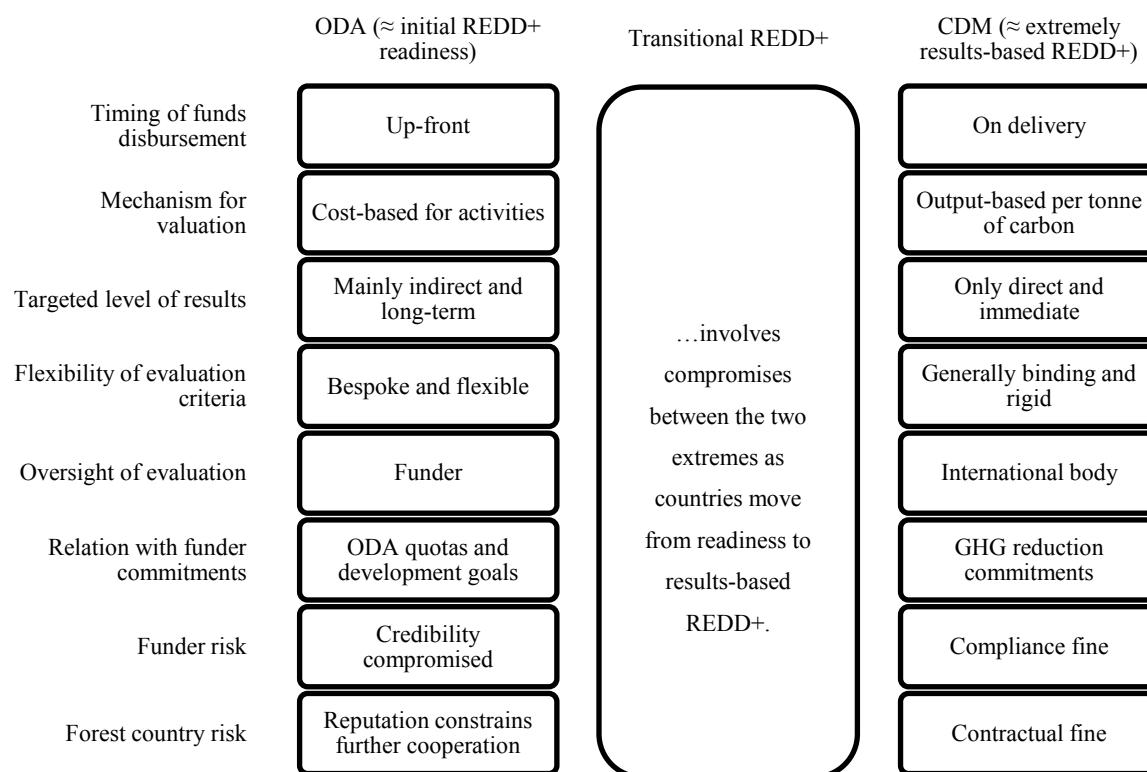
An important challenge in designing a more effective REDD+ mechanism is to integrate what has worked well under ODA schemes in the past with the success factors of the market-based CDM. A mechanism is needed that is both inclusive and focused on sustainable development benefits (the criteria associated with ODA) and, at the same time, oriented towards quantified results regarding emission reductions as the basis for allocating funding (as with the CDM). Equally, the mechanism should not give rise to the negative consequences associated with either ODA or the CDM (see Table 1).

**Table 1: Comparison of ODA and the CDM**

	Focus	Gap	Potential consequences
Grant-based ODA	Allocates funding to maximise sustainable development benefits and ensure broad inclusiveness	Funding allocation is not tied to performance in terms of measurable results of activities implemented	Effectiveness of activities can be limited and it can be hard to demonstrate results
Results-based CDM	Allocates funding based on emission reduction results, as measured by a stringent monitoring approach	Sustainable development co-benefits play a secondary role in selecting and implementing activities	Scope is limited to the most profitable activities and countries (typically those with highest pre-project emissions)

Furthermore, it is commonly recognised that REDD+ will involve a wide variety of activities across its three phases, and that progression through these phases may occur at a different pace in different countries, with numerous likely overlaps between phases, even within the same country. It will therefore be useful to define the features of this transitional zone, which can be mapped out by comparing the differences between key features of grant-based ODA (closely associated with the readiness phase of REDD+) and the CDM (an extreme form of a results-based mechanism), as shown in Figure 1.





**Figure 1: Comparing key features of ‘results’ under ODA and the CDM**

Several key characteristics of transitional REDD+ emerge that will determine how attractive such arrangements are likely to be to each party. First, there are quite different financial mechanics: under the CDM, funds that reflect fluctuating market prices are received by the recipient entity only after an *ex-post* audit has found activities to have reduced emissions, and carbon credits have been issued and then transferred to the buyer country or entity; in grant-based ODA, donors allocate pre-defined funding based on estimated costs for activities, before they are implemented, with varying levels of co-funding by developing partner countries. REDD+ is likely to move over time from predictable, up-front readiness funding, with low co-funding requirements, to something more like a market, where funders will seek to purchase emission reduction ‘results’ cost-effectively, possibly with higher co-funding requirements.

Second, the way results are defined in REDD+ will affect how attractive it is to forest countries. The results of a CDM project have just one key indicator: the amount of emissions reduced, according to detailed accounting rules in CDM methodologies. By contrast, grant-based ODA

initiatives typically target several different outcomes and impacts that are evaluated according to bespoke and flexible sets of indicators according to the OECD-DAC criteria (OECD, 2012). Some countries may want REDD+ to focus on tonnes of carbon as the main indicator for project success, while other countries may want to target co-benefits equally. Whether the methodologies for tracking the indicators of 'results' are flexible enough to accommodate diverse forest country circumstances will be an important criterion of attractiveness to those countries.

Third, the risk profile of REDD+ transactions and how it relates to funder countries' commitments is crucial. Under the CDM, transactions revolve around a purchase of offsets, which allow the funder to reduce the overall costs of complying with emission reduction targets (where non-compliance carries a risk of hefty fines). In ODA, despite the general trend to orient more public sector funding towards 'results' and 'performance', particularly when dealing with the private sector (Ghosh et al., 2012), commitments tend to relate more to the level of spending rather than its outputs, and penalties for lack of effectiveness are either non-existent or at most reputational. Results-based REDD+ is likely to 'count' in some way towards some kind of commitment by the funder country, either in terms of climate finance commitments, or by generating some kind of offsets to help meet emission reduction commitments. Either way, the risk for the funder country is likely to be higher than for ODA in general, and the extent to which that risk is transferred to forest countries will be an important determinant of attractiveness for funder countries.

With much current momentum around the readiness for REDD+ and still little clarity on results-based REDD+, an important question is whether forest and funder countries have complementary interests in moving forward from an ODA-style readiness support mechanism to results-based REDD+.

### **3. How attractive is result-based REDD+ for whom and why?**

A SWOT analysis was used to provide a simple, widely recognised way to structure key insights from the literature to highlight the key factors that are considered to be conducive or detrimental to achieving the objective of greatly enhanced funding for tropical land use and forestry. A SWOT analysis (Andrews, 1980) is a relatively simple strategic planning method that has been widely used by management consultants to evaluate business propositions (Helms & Nixon, 2010). It involves

specifying the objective of a venture and assessing the factors material to achieving it, in particular the internal (i.e. strengths and weaknesses) and external (i.e. opportunities and threats) factors that are favourable (or not) to the objective. Although the SWOT approach has been widely and strongly criticised for being merely descriptive, lacking prioritisation or weighting of identified factors, and being poorly linked to subsequent implementation in business practice (Hill & Westbrook, 1997), it is nevertheless useful in this non-business context to provide a logical structure for a qualitative discussion of internal and external factors relevant to the achievement of REDD+ objectives. SWOT analysis has been applied in the context of REDD+ before, but it has mainly been applied to individual projects (Dulal et al., 2012) rather than generic groups of countries (as is done here). In the present case, the SWOT analysis will help to identify clusters of key issues that must be considered when evaluating whether REDD+ activities will be attractive to different groups of countries.

The discussion here focuses on Phase 3 of the REDD+ mechanism, as the barriers to both forest and funder countries participating in the readiness phase are comparatively low. Funder countries tend to count 'readiness' funds as part of their ODA commitments (whether this is appropriate or not is arguable; e.g. see Transparency International, 2011). For forest countries, the amount of co-funding required in the readiness phase is usually low, and most activities are useful in their own right. The most significant risk in the readiness phase is the uncertainty over whether the more substantial rewards of results-based REDD+ will ever actually materialise, which does not seem to be a significant deterrent.

### ***3.1. The forest country's point of view on results-based REDD+***

Results-based REDD+ entails a significant and increasing commitment on the part of the forest country. This could be interesting to the forest country, because reducing emissions from the forest sector is expected to have a range of other sustainable development benefits (Brown et al., 2008b) although large uncertainties remain (Caplow et al., 2011). However, reducing emissions could entail foregoing some development of the forestry and agricultural sectors, and it may require some co-funding from the forest country. Table 2 summarises the key strengths, weaknesses, opportunities, and threats of results-based REDD+ from the perspective of forest country governments, drawn from the literature.

**Table 2: SWOT of results-based REDD+ for forest countries**

Strengths	Weaknesses
<p>Sa. Provides funding for the forest sector beyond past ODA flows (Sunderlin &amp; Atmadja, 2009)</p> <p>Sb. Allows countries to engage in mitigation that could not benefit from the Kyoto Protocol's flexible mechanisms, namely the CDM (Skutsch et al., 2007)</p> <p>Sc. Countries can choose their own set of activities that is optimal under national circumstances (Eliasch, 2008)</p> <p>Sd. Funding proposals could adjust rules to individual country requirements regarding forest monitoring, setting reference levels and crediting (The Meridian Institute, 2009b; Grainger &amp; Obersteiner, 2011; Herold et al., 2011)</p>	<p>Wa. Forest countries may need to co-fund activities with funding limited to benchmark costs per emission reduction (The Meridian Institute, 2009b)</p> <p>Wb. Countries need to pre-finance REDD+ activities with crediting <i>ex-post</i>, taking the risk that activities reduce emissions less than expected (Streck et al., 2010)</p> <p>Wc. Some activities could entail foregoing economic development options (McKinsey, 2009)</p> <p>Wd. Resistance against some kinds of activities from stakeholders with vested interests: agribusinesses, timber industry, government institutions (Pacheco et al., 2012)</p>
Opportunities	Threats
<p>Oa. Countries could involve private sector in implementing activities at project level (Pedroni et al., 2009)</p> <p>Ob. Preservation of environmental services and natural resources through some activities could create enormous economic value (TEEB, 2011)</p>	<p>Ta. Funding streams could dry up (Phelps et al., 2011)</p>

The most attractive aspect of the results-based REDD+ proposition for forest countries is the unprecedented scale of funding it offers for the forest sector (Sa), particularly for countries with significant forest-related mitigation potential that could not be rewarded under previous international mitigation efforts (Sb). However, in order to have an impact on decision-making in forest countries, the funding signals need to be reliable in the long term (Ta).

The funding streams under REDD+ are conditional on the amounts of emissions reduced, and its success is therefore not only about raising the right amounts of funding, but also about selecting the most cost-effective activities to engage in. This is what creates two of its key challenges. First, funding could be limited to a benchmark cost per unit of emission reductions achieved and thus forest countries would need to co-fund activities if abatement costs exceeded the benchmark (Wa).

The REDD+ mechanism therefore needs flexibility to focus on those activities that can reduce emissions most cost-effectively or that may be more beneficial in particular countries for other reasons (Sc). The extension from only reduced deforestation to the more encompassing scope of REDD+ is a positive sign of recognition that there is a need for country-specific flexibility in terms of eligible activities.

Second, activities will probably only be rewarded *ex-post* after action has proven successful, which means that forest countries will need to pre-finance and assume the risk that activities underperform (Wb). However, country-specific funding agreements (Sd) could conceivably also include up-front funding components in addition to *ex-post* results-based payments. There is also an opportunity to mobilise private sector financing, as long as the risks are manageable (Oa). Nevertheless, not all countries are equally well positioned to pre-finance activities, negotiate flexible deals, or involve the private sector.

There are also concerns that protecting forests could entail foregoing development options in the forestry and agricultural sector (Wc). The consideration of different development trajectories in the definition of reference levels is critical (Sd). Moreover, there is the expectation that many REDD+ activities will have benefits for the sustainable development of forest-dependent communities and the protection of biodiversity and other environmental services (Ob) (although other groups could gain an advantage through unsustainable resource use and put up resistance [Wd]).

### ***3.2. The funder country's point of view on results-based REDD+***

Results-based REDD+ will entail significant commitments from the funder countries, who will assume exposure to the uncertain governance environment in the forest countries. The strengths, weaknesses, opportunities and threats of results-based REDD+ from the perspective of funder country governments are summarised in Table 3.

**Table 1: SWOT of results-based REDD+ for funder countries**

Strengths	Weaknesses
<p>Sa. Provides access to large and particularly cost-effective mitigation options (McKinsey, 2009)</p> <p>Sb. Could generate many non-carbon benefits towards other sustainable development indicators (Ebeling &amp; Yasué, 2008)</p>	<p>Wa. Some forest countries have weak governance profiles, rendering REDD+ success risky (Thompson et al., 2011)</p> <p>Wb. Some forest countries cannot provide collateral for the case of default on REDD+ commitments and deals are consequently risky (Neeff &amp; Ascui, 2009)</p> <p>Wc. Need to commit long-term, as only reliable funding can be the basis for permanent changes in business practices (Hamilton, 2009)</p> <p>Wd. The potential for mismanagement and corruption has reputational risks for the funder (Ascui &amp; Rivard, 2011)</p>
Opportunities	Threats
<p>Oa. International funds could take much of the delivery risk by pooling risks and providing collateral (Neeff &amp; Ascui, 2009)</p> <p>Ob. Project-level crediting under a ‘nested’ approach could avoid some country-level risks (Neeff &amp; Ascui, 2009)</p> <p>Oc. Could use some of the existing ODA funding streams for REDD+ (Vatn &amp; Angelsen, 2009)</p>	<p>Ta. International negotiations fail to deliver an agreement to unambiguously credit ‘results’ to the funder country (Angelsen et. al., 2012)</p>

A major strength of the REDD+ proposition from the funder’s point of view is that it is a mechanism to provide large-scale, cost-effective mitigation (Sa), with significant potential co-benefits for sustainable development (Sb). At present, a constraint on providing REDD+ funding for ‘results’ is that the global climate agreement for 2015 under negotiation may fail to provide clear recognition of the funder’s contribution (Ta). Even if there were such an agreement in future, there would still be a risk of losing time and money in underperforming forest countries if these are unable to deliver the promised REDD+ carbon reductions (Wa) or to pay damages for non-delivery (Wb). For these reasons, risk management options such as purchasing ‘results’ via an international

fund that diversifies risk through a portfolio approach (Oa) or nested project-level crediting (Ob) could be attractive.

It is also clear that it is important to get safeguards and monitoring systems right, which would make sure that REDD+ activities do no harm and deliver positive co-benefits (Sb), as well as avoiding the reputational damage from mismanagement or corruption (Wd). This could convince constituencies to allow relabeling of existing ODA funding streams for REDD+, and thus reduce overall costs for funder countries (Oc).

#### **4. How and where is results-based REDD+ attractive to both parties? An example from Indonesia**

REDD+ funding will flow only if it is attractive to both parties. According to the SWOT of the forest country's point of view, it is critical that national strategies adapt REDD+ to national circumstances and focus on the most promising activities (Sc). The most promising activities will be those that can reduce emissions most cost-effectively (Wa, Wb) with little resistance from powerful lobbies (Wd), and which are likely to generate net socio-economic benefits (Wc). Some forest countries will have a more stable financial and governance environment and therefore more scope for the most promising REDD+ activities. According to the SWOT of the funder country's point of view, it is also these most promising REDD+ activities and countries that are attractive for engagement (Wa, Wb), as underperforming REDD+ investments would carry significant risks.

This suggests that the interests of funder countries and forest countries coincide in the case of activities that score well in terms of financing and co-funding requirements, socio-economic impacts, and governance implications and risk profile. These are influenced by the forest countries' policy environment and capabilities with respect to each of these factors (see Table 4).

**Table 4: Key factors determining attractiveness of REDD+ activities and forest countries**

	Financing and co-funding requirements	Socio-economic impacts	Governance implications and risk profile
Activity profile	Extent to which the activity requires pre-financing or co-funding	Extent to which the activity entails foregoing economic development	Extent to which the activity relies on effective institutions
Forest country profile	Ability to pre-finance or co-fund	Ability to overcome resistance from interest groups	Ability to provide effective institutions

In order to test this framework, the case of the recent logging moratorium in Indonesia is considered here. Indonesia is a country which ranks high in terms of its emission reduction potential as well as readiness and interest in REDD+ (Estrada et al., 2012). The logging moratorium is an important element of the bilateral partnership between Norway and Indonesia, formalised through a Letter of Intent (LoI) in May 2010. The LoI pledges \$1 billion for performance-based payments in conjunction with some conditions to be met including, *inter alia*, the establishment of a special REDD+ agency and a two-year suspension on all new concessions for conversion of peat and natural forests (Norway & Indonesia, 2010). The case is therefore an early example of a results-based REDD+ transaction. But what made it attractive to both Norway and Indonesia?

#### **4.1. Financing and co-funding requirements**

Issuing a moratorium does not create a need for any direct extra government spending. In this it is different from many other REDD+ activities such as tree-planting programmes, which require forest countries to pre-finance or co-fund and that may therefore only be feasible in financially better-off countries (Neeff & Ascui, 2009). However, while extra spending is arguably negligible, the government foregoes licensing fees and tax revenues through the moratorium. Although it is hard to quantify these exactly, the promised \$1 billion from Norway may compensate for such losses at a later stage. Therefore, overall, the moratorium has low financing and co-funding requirements, making it particularly attractive to Indonesia.



## ***4.2. Socio-economic impacts***

Two aspects of the moratorium help to minimise socio-economic impacts. First, the moratorium does not address potential forest conversion under existing concessions, nor does it require a review of the legality of existing plantations and concessions (NORAD, 2011a). Second, there are several exemptions from the moratorium such as projects of national importance for food security (e.g. sugar cane, rice) and energy supply (e.g. geothermal projects) as well as extensions of valid business licenses (Indrarto et al., 2012). Also, plantation businesses can relocate to secondary rather than primary forests for expanding production areas (Indrarto et al., 2012). Such exemptions have been introduced specifically to address concerns about negative impacts on economic development (Gaia, 2011) and have helped the private sector to accept the moratorium (Indrarto et al., 2012). It has also been argued that significant loss of employment should not be expected (Murdiyarso et al., 2011). Although local rights and livelihoods are certainly affected by the suspension of logging, the impact is hard to assess because of the limited coverage and temporary nature of the moratorium (Brockhaus et al., 2012). The moratorium seems to avoid tough policy choices and keeps open future development options.

## ***4.3. Governance implications and risk profile***

Severe governance challenges have been obvious in the Indonesian forest sector in the past (Barr et al., 2009). The logging moratorium has been designed to function in this difficult environment. The potential for corruption in terms of siphoning off funds is minimised because the moratorium itself does not require significant financial transfers (whether or not corruption occurs in spending the Norwegian monies is a different issue). Likewise, because the moratorium relates to ceasing activities rather than to implementing new activities (such as tree planting, where governance concerns have been highlighted in Indonesia; Barr et al., 2009), the ability of the government to implement activities effectively is less important. Nevertheless, the transparency and adequacy of the decision-making process leading up to the moratorium has been criticised, in particular regarding the distribution of power between government institutions at different levels (Indrarto et al., 2012; Gaia, 2011). In addition, interest groups such as concessioners were able to water down several aspects of the moratorium (Dermawan et al., 2011). With respect to the rule of law, the moratorium does not have strong status in the national legal context: as a Presidential decree, infringements do not incur legal penalties (Indrarto et al., 2012). Also, it has been hinted that

ambiguous wording and confusing definitions may weaken the ability to enforce provisions (Murdiyarto et al., 2011). In summary, although there are governance issues with the moratorium, some high impact risks (corruption, ineffective implementation) have been mitigated. While the wider framework of the Norway-Indonesia LoI targets improved forest governance, such as coordinated land use planning and improved law enforcement, for the moratorium itself the connection to longer-term reforms is rather indirect because of the limited initial two-year time span (Indrarto et al., 2012).

#### ***4.4. Implications of the Indonesian logging moratorium case study***

The Indonesian logging moratorium has been feasible as a REDD+ activity because its financial, socio-economic and governance implications are not prohibitive, despite potential concerns on all these fronts with Indonesia as a forest country. Its prospects for becoming a successful policy instrument in this particular case are thus good, and it is attractive for both the forest (Indonesia) and the funder country (Norway). The moratorium seems to sidestep the main barriers to transformational change, rather than putting Indonesian financial and governance capacities and the willingness to make alternative socio-economic choices to the test. While this example is an early case of a results-based REDD+ activity that has received much attention, it is hypothesised that the three dimensions identified here – financing and co-funding requirements, socio-economic impacts, and governance implications and risk profile – will determine the attractiveness of results-based REDD+ activities more generally, in their varying national contexts.

## **5. Conclusions and recommendations**

### ***5.1. REDD+ is caught between ODA and the CDM***

REDD+ risks being caught in a fundamental trade-off between ODA and the CDM. The more stringent REDD+ is on monitoring and the allocation of funding based on results, the more restrictive it will tend to be on the kinds of activities that it can effectively incentivise in forest countries, resulting in the sort of biased allocation of resources associated with the CDM. Relaxing the monitoring and funding allocation requirements, in turn, may promote inclusiveness in terms of activities and countries, but is likely to result in less measurably effective actions, potentially obfuscating the connection between finance and results which has successfully mobilised

investment in the CDM and carbon markets more generally (Kossoy & Guignon, 2012; Neeff & Ascui, 2009; UNFCCC, 2008b).

Falling into either of these traps would compromise REDD+ and its contribution to climate change mitigation and sustainable development. As an international funding mechanism for forestry and land use, REDD+ should therefore integrate what has worked well under ODA schemes in the past with the success factors of the CDM. This entails more detailed consideration of two further points. First, the main focus of REDD+ should remain on generating sustainable development benefits and ensuring that the mechanism is inclusive. Deviating from this would draw REDD+ too close to the CDM and result in the mechanism being limited to only some countries and activities, which would compromise its overall success.

Second, the allocation of REDD+ funding in the longer term needs to be based on measurable results in terms of emission reductions. Softening this requirement might broaden the list of countries and activities but would ultimately drive REDD+ much closer to grant-based ODA and seriously limit its potential to provide a substantial contribution to climate change mitigation. The ability to move from readiness to results-based REDD+ will depend on the policy framework and on developing complementary interests between forest and funder countries. Although REDD+ may be slow to move beyond readiness, there are ways to lower the barriers to this transition.

## ***5.2. REDD+ may be slow to move beyond readiness***

Participation in the readiness phase of REDD+ is an easy choice for all countries. Although the available funding is small relative to that envisaged for results-based REDD+, the required commitments are also minimal. Many countries may therefore try get as much as they can out of the readiness phase of REDD+, where funding works much in the style of grant-based ODA. The real test to the attractiveness of REDD+ will only come once countries enter the results-based phase.

During the results-based phase, REDD+ may tend to concentrate on ‘low-hanging fruits’ both in terms of activities and countries. Only some activities will reliably generate socio-economic benefits at the small scale of communities and protect valuable ecosystem services without constraining economic development at the larger scale. Moreover, only in some cases will the

governments be able to successfully implement complex activities despite the resistance of various interest groups. Only some countries will have the institutions and governance structures to actually reduce deforestation.

Nevertheless, there are ways to manage these challenges and thus to expand the limits of results-based REDD+. Complementary strengths and opportunities need to be leveraged in order to address weaknesses and threats, and thus lower barriers to results-based REDD+ for more countries and activities.

### ***5.3. Ways to lower barriers to results-based REDD+***

There are options to design results-based REDD+ to maximise its inclusiveness, its focus on results and its sustainable development benefits. Although these cannot completely overcome the problems presented by the various trade-offs, they may help balance the mechanism and maximise its performance.

#### *5.3.1. Use the private sector to manage the governance challenge and to unlock financing*

Project-based action can break the deforestation problem into manageable pieces. Implementing REDD+ through project-based activities could help address the governance challenge. While at the national level, corruption or the influence of powerful pressure groups may be insurmountable, downscaling to regional or project level and working through the private sector, instead of only through public agencies, could make these challenges more manageable. The so-called ‘nested approach’ to REDD+ is a popular proposal for how to integrate activities and monitoring at a project scale with the national scale (Pedroni et al., 2009).

Moreover, for activities at a project level, raising private sector finance is conceivable. The amounts of funding required are more manageable, and financiers are better able to assess risks than they would be for activities at a larger or national scale. So, breaking the deforestation problem into pieces might enable accessing finance from private sector sources (Pedroni et al., 2009), particularly if decoupling the assessment of results and reference levels at the project level from the national level could be achieved through the ‘nested approach’ (Neeff & Ascui, 2009).

### *5.3.2. Negotiate flexible deals to overcome the financing bottleneck*

Introducing creative structures for risk management could help overcome the pre-financing bottleneck. Embedding risk management into deals may enable participation from forest countries that otherwise find it impossible to pre-finance REDD+ activities. Funder countries might likewise be unwilling to pre-finance activities if uncertain whether deforestation will ever be reduced. Creative solutions to help manage this risk include combining results-based payments with up-front ODA-style enabling support, *ex-ante* crediting, risk-transfer through third-party underwriting, and participation in a pooled 'risk buffer' with staged release of credits (as applied by certain voluntary carbon market standards; see Neeff and Ascui, 2009). Some of these options could, to varying degrees, risk undermining the mechanism as a whole if risks are not appropriately managed, and therefore need to be very carefully considered.

### *5.3.3. Take account of country context and economic development*

Reference levels for deforestation can be adjusted relative to country conditions, and different development trajectories can be accommodated. Countries that have not yet fully developed their forestry and agricultural sectors could then use REDD+ to incentivise climate-compatible development paths. The methodological design for REDD+ and its reference levels should make provision for this, both at a larger level and at the project level.

### *5.3.4. Ensure protection of ecosystem services, communities, and economic development*

REDD+ action needs some direction if it is to focus on activities with the highest co-benefits. Under the CDM, the private sector received little regulation from governments in most countries, and the distribution of investment therefore largely reflects private sector profit maximisation. Forest countries have the option to take a much more proactive stance for REDD+, as they already do in directing ODA investments. Forest countries should design their REDD+ strategies to avoid constraining development and to maximise co-benefits, thus directing the private sector to focus on desired activities beyond the most profitable project types in the same regions. Governments can design approval procedures and benefit sharing regimes to direct activities as desired, or take the lead in well-balanced land use and development planning.

Nevertheless, forest countries must also be realistic and recognise that in order for large-scale funds to flow during the result-based phase of REDD+, the interests of funder countries must also be met and matched with the realities of forest countries' own policy environment and capabilities. This implies a need for greater attention to the intersection of forest and funder countries interests in specific activities – particularly with respect to financing and co-funding requirements, socio-economic impacts and governance implications – in order to successfully find a way forward for REDD+ between ODA and the CDM.

## **Acknowledgements**

We are grateful to the three anonymous reviewers, whose comments greatly improved the manuscript. Thanks also to Heiner von Lüpke from GIZ Indonesia for fruitful discussions that contributed to the analysis.

## References

Alix-Garcia, J., Shapiro, E., & Sims, K. (2012). Forest conservation and slippage: Evidence from Mexico's national payments for ecosystem services program. *Land Economics*, 88(4), 613–638.

Andrews, K. R. (1980). *The concept of corporate strategy*. Homewood, IL: DowJones-Irwin.

Angelsen, A., Brockhaus, M., Sunderlin, W. D., & Verchot, L. V. (Eds.). (2012). *Analysing REDD+: Challenges and choices*. Bogor: Center for International Forestry Research (CIFOR).

Ascui, F. & Rivard, B. (2011) *Safeguarding REDD+ finance: Ensuring effective, transparent and accountable international financial flows*. Retrieved from <http://www.globalwitness.org/sites/default/files/library/Safeguarding%20REDD%20-%20LTS%20report%20web%20sm.pdf>

Barr, C., Dermawan, A., Purnomo, H., & Komarudin, H. (2009). *Readiness for REDD: financial governance and lessons from Indonesia's Reforestation Fund (RF)*. CIFOR Infobrief 20. Bogor: Center for International Forestry Research (CIFOR).

BMZ. (2012). *REDD Early Movers (REM) - Rewarding pioneers in forest conservation. Financial rewards for successful climate change mitigation!* Bonn: Federal Ministry for Economic Cooperation and Development (BMZ).

Boyle, J. (2011). *Assessing the Outcomes of COP17. In Pursuit of a Binding Climate Agreement: Negotiators Expand the Mitigation Tent But Reinforce the Ambition Gap*. Winnipeg: International Institute for Sustainable Development (ISSD).

Brockhaus, M., Obidzinski, K., Dermawan, A., Laumonier, Y., & Luttrell, C. (2012). An overview of forest and land allocation policies in Indonesia: Is the current framework sufficient to meet the needs of REDD+? *Forest Policy and Economics*, 18, 30-37.

Brown, D., Schreckenber, K., Bird, N., Cerutti, P., Del Gatto, F., Diaw, C., Fomete, T, Luttrell, C., Navarro, G., Oberndorf, R., Thiel, H., Wells, A. (2008a). *Legal Timber: Verification and Governance in the Forest Sector*. London, UK: Overseas Development Institute (ODI).

Brown, D., Seymour, F., & Peskett, L. (2008b). How do we achieve REDD co-benefits and avoid doing harm? In A. Angelsen (Ed.), *Moving ahead with REDD: Issues, options and implications*. (pp. 107-118). Bogor: Center for International Forestry Research (CIFOR).

Caplow, S., Jagger, P., Lawlor, K., & Sills, E. (2011). Evaluating Land Use and Livelihood Impacts of Early Forest Carbon Projects: Lessons for Learning about REDD+. *Environmental Science & Policy*, 14(2), 152-167.

Cashore, B., & Stone, M. (2012). Can Legality Verification Rescue Global Forest Governance? Analyzing the Potential of Public and Private Policy Intersection to Ameliorate Forest Challenges in Southeast Asia. *Forest Policy and Economics*, 18, 13-22.

Cashore, B., Auld, G., Bernstein, S., & Mc Dermott, C. (2007). Can Non-state Governance 'Ratchet Up' Global Environmental Standards? Lessons from the Forest Sector. *Review of European Community & International Environmental Law*, 16(2), 158-172.

Colfer, C. J. P., Capistrano, D., Dabal, G. R., & Moeliono, M. (Eds.). (2008). *Lessons from Forest Decentralization. Money Justice and the Quest for Good Governance in Asia-Pacific*. London: Earthscan.

Contreras-Hermosilla, A. (2007). *Forest Law Enforcement and Governance Program. Review of Implementation*. Washington, D.C.: World Bank.

Corbera, E., Estrada, M., & Brown, K. (2010). Reducing Greenhouse Gas Emissions from Deforestation and Forest Degradation in Developing Countries: Revisiting the Assumptions. *Climatic Change*, 100(3), 355-388.

Davenport, D. S. (2005). An Alternative Explanation for the Failure of the UNCED Forest Negotiations. *Global Environmental Politics*, 5(1), 105-130.

Dermawan, A., Petkova, E., Sinaga, A.C., Muhajir, M., & Indriatmoko, Y. (2011). *Preventing the risk of corruption in REDD+ in Indonesia*. CIFOR Working Paper 78. Bogor: Center for International Forestry Research (CIFOR).



Dulal, H. B., Shah, K. U., & Sapkota, C. (2012). Reducing emissions from deforestation and forest degradation (REDD) projects: Lessons for future policy design and implementation. *International Journal of Sustainable Development & World Ecology*, 19(2), 116-129.

Dutschke, M., & Wertz-Kanounnikoff, S. (2008). How do we match country needs with financing sources? In A. Angelsen (Ed.), *Moving Ahead with REDD: Issues, options and implications*. (pp. 41-52). Bogor: Center for International Forestry Research (CIFOR).

Ebeling, J., & Yasué, M. (2008). Generating carbon finance through avoided deforestation and its potential to create climatic, conservation and human development benefits. *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences*, 363(1498), 1917–1924.

Eliasch, J. (2008). *Climate change: Financing global forests*. London: Office of Climate Change (OCC).

Estrada, M., Trines, E., & Emmer, I. (2012). *Comparative Study on REDD+: Recommendations for Action*. LJ Jisp, The Netherlands: Silvestrum.

FAO. (2010). *Global Forest Resources Assessment 2010. Main Report*. FAO Forestry Paper 163. Rome: Food and Agriculture Organization of the United Nations (FAO).

Fuhr, H., & Lederer, M. (2009). Varieties of Carbon Governance in Newly Industrializing Countries. *The Journal of Environment & Development*, 18(4), 327-345.

Gaia. (2011). *Indonesia-Norway REDD+ Partnership: first evaluation of deliverables*. Helsinki: Gaia Consulting.

Ghosh, A., Müller, B., Pizer, W., & Wagnere, G. (2012). *Mobilizing the private sector: Quantity-performance instruments for public climate funds*. Oxford Energy and Environment Brief. Oxford: The Oxford Institute for Energy Studies, University of Oxford.

Grainger, A., & Obersteiner, M. (2011). A Framework for Structuring the Global Forest Monitoring Landscape in the REDD+ Era. *Environmental Science & Policy*, 14(2), 127-139.

Hamilton, K. (2009). *Unlocking finance for clean energy: the need for “investment grade” policy*. Energy, Environment and Development Programme Paper 09/04. London: Chatham House.

Helms, M.M., Nixon, J. (2010). Exploring SWOT analysis – where are we now? A review of academic research from the last decade. *Journal of Strategy and Management*, 3(3), 215-251.

Herold, M., Roman-Cuesta, R., Mollicone, D., Hirata, Y., Van Laake, P., Asner, G., Souza, C., Skutsch, M., Avitabile, V., MacDicken, K. (2011). Options for monitoring and estimating historical carbon emissions from forest degradation in the context of REDD+. *Carbon Balance and Management*, 6(13), 1-7.

Hill, T., & Westbrook, R. (1997). SWOT analysis: It’s time for a product recall. *Long Range Planning*, 30(1), 46–52.

Humphreys, D. (Ed.). (2006). *Logjam: Deforestation and the Crisis of Global Governance*. London: Earthscan.

Indrarto, G. B., Murharjanti, P., Khatarina, J., Pulungan, I., Ivalerina, F., Rahman, J., Prana, M. N., Resosudarmo, I. A. P., Muharrom, E. (2012). *The context of REDD+ in Indonesia: Drivers, agents and institutions*. CIFOR Working Paper 92. Bogor: Center for International Forestry Research (CIFOR).

IPCC. (2007). *Climate Change 2007: Synthesis Report*. Geneva: Intergovernmental Panel on Climate Change (IPCC).

IWG-IFR. (2009). *Report of the informal working group on interim finance for REDD+*. Informal working group on interim finance for REDD+ (IWG-IFR).

Kanowski, P. J., McDermott, C. L., & Cashore, B. W. (2011). Implementing REDD+: Lessons from Analysis of Forest Governance. *Environmental Science & Policy*, 14(2), 111-117.

Karakosta, C., & Marinakis, V. (2013). Does the CDM offer sustainable development benefits or not? *International Journal of Sustainable Development & World Ecology*, 20(1), 37-41.

Karsenty, A. (2012). *Financing options to support REDD+ activities: Based on a review of the literature*. Report for the European Commission, DG Climate Action. Paris, France: Agricultural Research for Development (CIRAD).

Kossoy, A., & Guignon, P. (2012). *State and trends of the carbon market 2012*. Washington, D.C.: World Bank.

Lambert, S. (2007). *Is the CDM fulfilling its environmental and sustainable development objectives: An evaluation of the CDM and options for improvement*. Berlin: WWF.

Lawson, S., & MacFaul, L. (2010). *Illegal Logging and Related Trade: Indicators of the Global Response*. London: Chatham House.

Lederer, M. (2010). From CDM to REDD+ - What Do We Know for Setting Up Effective and Legitimate Carbon Governance? *Ecological Economics*, 70(11), 1900-1907.

McKinsey. (2009). *Pathways to a low-carbon economy: Version 2 of the global greenhouse gas abatement cost curve*.

Murdiyarso, D., Dewi, S., Lawrence, D., & Seymour, F. (2011). *Indonesia's Forest Moratorium: A Stepping Stone to Better Forest Governance?* CIFOR Working Paper 76. Bogor: Center for International Forestry Research (CIFOR).

Neeff, T., & Ascui, F. (2009). Lessons from carbon markets for designing an effective REDD architecture. *Climate Policy*, 9(3), 306–315.

NORAD. (2011a). *Real-Time Evaluation of Norway's International Climate and Forest Initiative. Contributions to National REDD+ Processes 2007-2010. Country Report: Indonesia. Evaluation Report 16/2010*. Oslo: Norwegian Agency for Development Cooperation (NORAD).

NORAD. (2011b). *Real-Time Evaluation of Norway's International Climate and Forest Initiative: Contributions to a Global REDD+ Regime 2007-2010: Evaluation Report 12/2010*. (p. 108). Oslo: Norwegian Agency for Development Cooperation (NORAD).

Norway & Indonesia. (2010). Letter of Intent between the Government of the Kingdom of Norway and the Government of the Republic of Indonesia on "Cooperation on Reducing Greenhouse Gas Emissions from Deforestation and Forest Degradation".

OECD. (2012). *DAC criteria for evaluating development assistance*. Paris: Organisation for Economic Co-operation and Development (OECD).

Pacheco, P., Putzel, L., Obidzinski, K., & Schoneveld, G. (2012). REDD+ and the global economy: Competing forces and policy options. In A. Angelsen, M. Brockhaus, W. D. Sunderlin & L. V. Verchot (Eds.), *Analysing REDD+: Challenges and choices* (pp. 51-66). Bogor: Center for International Forestry Research (CIFOR).

Pedroni, L., Dutschke, M., Streck, C., & Porrúa, M. E. (2009). Creating incentives for avoiding further deforestation: the nested approach. *Climate Policy*, 9(2), 207–220.

Peskett, L., Schreckenberg, K., & Brown, J. (2011). Institutional Approaches for Carbon Financing in the Forest Sector: Learning Lessons for REDD+ from Forest Carbon Projects in Uganda. *Environmental Science & Policy*, 14(2), 216-229.

Phelps, J., Webb, E. L., & Agrawal, A. (2010). Does REDD+ Threaten to Recentralize Forest Governance? *Science*, 328, 312-313.

Phelps, J., Webb, E. L., & Koh, L. P. (2011). Risky business: An uncertain future for biodiversity conservation finance through REDD+. *Conservation Letters*, 4(2), 88-94.

Pistorius, T. (2012). From RED to REDD+: The evolution of a forest-based mitigation approach for developing countries. *Current Opinion in Environmental Sustainability*, 4, 1-8.

Pistorius, T., Schaich, H., Winkel, G., Plieninger, T., Bieling, C., Konold, W., & Volz, K.-R. (2012). Lessons for REDDplus: A comparative analysis of the German discourse on forest functions and the global ecosystem services debate. *Forest Policy and Economics*, 18, 4-12.

PwC (2011). *Funding for forests: UK Government support for REDD+*. London. PricewaterhouseCoopers.

Pülzl, H., & Rametsteiner, E. (2002). Grounding International Modes of Governance into National Forest Programmes. *Forest Policy and Economics*, 4(4), 259-268.

Rayner, J., & Howlett, M. (2004). National Forest Programmes as Vehicles for Next Generation Regulation. In D. Humphreys (Ed.), *Forests for the Future. National Forest Programmes in Europe: Country and Regional Reports from COST Action E19*. European Cooperation in the Field of Scientific and Technical Research (COST).

Ribot, J. C., Agrawal, A., & Larson, A. M. (2006). Recentralizing While Decentralizing: How National Governments Reappropriate Forest Resources. *World Development*, 34(11), 1864-1886.

Seymour, F., & Angelsen, A. (2012). Summary and conclusions: REDD+ without regrets. In A. Angelsen, M. Brockhaus, W. D. Sunderlin & L. V. Verchot (Eds.), *Analysing REDD+: Challenges and choices* (pp. 317-334). Bogor: Center for International Forestry Research (CIFOR).

Skutsch, M., Bird, N., Trines, E., Dutschke, M., Frumhoff, P., de Jong, B. H. J., van Laake, P., Masera, O., Murdiyarsa, D. (2007). Clearing the way for reducing emissions from tropical deforestation. *Environmental Science & Policy*, 10(4), 322-334.

Streck, C. (2007). The governance of the Clean Development Mechanism: The case for strength and stability. *Environmental Liability Journal*, 15(2), 91-100.

Streck, C., & Parker, C. (2012). Financing REDD+. In A. Angelsen, M. Brockhaus, W. D. Sunderlin & L. V. Verchot (Eds.), *Analysing REDD+: Challenges and choices* (pp. 111-128). Bogor: Center for International Forestry Research (CIFOR).

Streck, C., & Scholz, S. M. (2006). The Role of Forests in Global Climate Change: Whence We Come and Where We Go. *International Affairs*, 82(5), 861-879.

Streck, C., Porrua, M. E., Bracer, C., & Coren, M. (2010). *Options for Managing Financial Flows from REDD+*. Report for the WWF. ClimateFocus.

Sunderlin, W. D., & Atmadja, S. (2009). Is REDD + an idea whose time has come or gone? In Arild Angelsen (Ed.), *Realising REDD+: National strategy and policy options* (pp. 45–54). Bogor: Center for International Forestry Research (CIFOR).

Tacconi, L., Mahanty, S., & Suich, H. (Eds.). (2010). *Payments for Environmental Services, Forest Conservation and Climate Change. Livelihoods in the REDD?* Cheltenham: Edward Elgar Publishing.

TEEB. (2011). *The Economics of Ecosystems and Biodiversity in Business and Enterprise*. London: Earthscan.

The Meridian Institute (2009a). *Reducing Emissions from Deforestation and Forest Degradation (REDD): An Options Assessment Report*. (A. Angelsen, S. Brown, C. Loisel, L. Peskett, C. Streck, & D. Zarin, Eds.) Washington, D.C.: The Meridian Institute.

The Meridian Institute. (2009b). *REDD+ Institutional Options Assessment*. (C. Streck, L. Gomez-Echeverri, P. Gutman, C. Loisel, & J. Werksman, Eds.). Washington, D.C.: The Meridian Institute.

Thompson, M. C., Baruah, M., & Carr, E. R. (2011). Seeing REDD+ as a Project of Environmental Governance. *Environmental Science & Policy*, 14(2), 100-110.

Transparency International. (2011). *Global Corruption Report: Climate Change*. London: Earthscan.

UNFCCC. (2008a). *Report of the Conference of the Parties on its thirteenth session, held in Bali, from 3 to 15 December 2007. Addendum Part Two: Action taken by the Conference of the Parties at its thirteenth session*. Bonn: United Nations Framework Convention on Climate Change (UNFCCC).

UNFCCC. (2008b). *Investment and financial flows to address climate change: an update*. Bonn: United Nations Framework Convention on Climate Change (UNFCCC).

UNFCCC. (2012a). *Benefits of the Clean Development Mechanism 2012*. Bonn: United Nations Framework Convention on Climate Change (UNFCCC).

UNFCCC. (2012b). *Financing options for the full implementation of results-based actions relating to the activities referred to in decision 1/CP.16, paragraph 70, including related modalities and procedures*. Bonn: United Nations Framework Convention on Climate Change (UNFCCC).

Vatn, A., & Angelsen, A. (2009). Options for a national REDD+ architecture. In A. Angelsen (Ed.), *Realising REDD+: National strategy and policy options*. Bogor: Center for International Forestry Research (CIFOR).

von Unger, M., Streck, C., & Lee, D. (2012). *Options for Financing REDD+ in the EU: Status and Opportunities*. Arlington, VA: The Nature Conservancy (TNC).

Wertz-Kanounnikoff, S., Verchot, L. V., Kanninen, M., & Murdiyarto, D. (2008). How do we monitor, report and verify carbon emissions from forests? In A. Angelsen (Ed.), *Moving ahead with REDD: Issues, options and implications* (pp. 87-98). Bogor: Center for International Forestry Research (CIFOR).

Winkelman, A. G., & Moore, M. R. (2011). Explaining the differential distribution of Clean Development Mechanism projects across host countries. *Energy Policy*, 39(3), 1132–1143.

Wunder, S. (2008). Payments for environmental services and the poor: concepts and preliminary evidence. *Environment and Development Economics*, 13, 279–297.