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WIDER Working Paper No. 2013/135

REDD+ as performance-based aid

General lessons and bilateral agreements of Norway

Arild Angelsen¹

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Abstract

REDD+, when it officially became part of the international climate agenda in 2007, was an idea about payment to countries and projects for reducing emission from forests, with funding primarily from carbon markets. REDD+ has since become multi-objective; the policy focus has changed from payments for environmental services (PES) to broader policies, and international funding is mainly coming from development aid budgets. This ‘aidification’ of REDD+ has made it similar to previous efforts of conditional, result-based, or performance-based aid (PBA). But, experience of PBA, in other sectors, has hardly been brought into the REDD+ debate. A major conclusion from earlier research is that aid cannot buy policy reforms, yet this remains a major idea in current REDD+ discourses. This paper reviews the main challenges in designing and implementing a system of PBA in terms of donor spending pressure, performance criteria, benchmark setting, risk sharing, and credibility, in terms of amount of funding provided. It then reviews four bilateral REDD+ agreements Norway has entered with Tanzania, Brazil, Guyana, and Indonesia. Some elements of performance-based payments were included, and these agreements and the aid experience provide valuable lessons for design and implementation of future REDD+ mechanism.

Keywords: deforestation, climate change, conditionality, PES, Norway

JEL classification: O13, Q23, Q54

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1 The evolving REDD+

In 2007, the annual conference of the parties (COP) of the UN Framework Convention on Climate Change (UNFCCC), decided to fully integrate forests in developing countries into the negotiations on a new climate agreement. Under the heading of REDD (Reducing Emissions from Deforestation and Forest Degradation) or REDD+ (also including carbon stock enhancements), forest conservation is seen in as critical to limit global warming to two degrees Celsius. Donors have pledged billions of dollars, countries have developed and started implementing national REDD+ strategies, and NGOs and other proponents are engaged in hundreds of REDD+ projects at the local level.

REDD+ was originally an idea about payment to countries and projects for reduced emissions, with funding primarily from carbon markets. Since then, REDD+ has changed in several significant and interrelated ways (Angelsen and McNeill 2012). First, it has moved from a carbon focus to become multi-objective, with livelihoods/poverty, biodiversity, adaptation, indigenous rights, good governance, etc. being added as worthy objectives. Second, international funding is mainly coming from bilateral and multilateral development aid budgets, and not carbon markets. Third, the domestic policy focus has changed from payments for environmental services (PES) to broader policies. This change has been driven by several factors, including the lack of a new international climate agreement (making carbon market funding unavailable), the numerous challenges of establishing a PES system, and the political dynamics of REDD+, where different interest groups have inserted their own agendas into the global and national REDD+ agendas.

Today, REDD+ at the international level, appears similar to previous efforts of conditional and result-based aid. This ‘aidification’ of REDD+ (Seymour and Angelsen 2012) can be explained by several factors. First, large-scale market funding is unavailable due to the failure to establish a new global carbon market that integrates REDD+ credits.¹ Second, many donors were involved in the REDD-relevant sectors (forest, conservation, rural development, institutional building, etc.), and ongoing activities could, with light modifications, be relabeled as REDD+ and tap into new budget lines. Third, the aid sector already provided a mechanism and modality to transfer fresh money to REDD+ countries. Fourth, REDD+ money was labeled as aid to help donors achieve international aid targets.

Yet, the core idea of REDD+ as aid is to apply conditionality and make payments to countries (and projects) based on performance or results. Performance-based aid (PBA) or conditional aid is not new. Conditionality was part of the Structural Adjustment Programs (SAP) from the mid-1980s, led by the World Bank and IMF. Disbursement of aid money was supposed to be conditioned on deep policy reforms. ‘This is indeed the core of what conditionality is supposedly about—aid buys reform. Unfortunately, it does no such thing’ (Collier 1997: 56). The Paris Declaration on Aid Effectiveness (2005) also calls for more PBA. PBA has been applied increasingly in other sectors; e.g. in health (Eichler et al. 2009; Eldridge and Palmer 2009) and in primary education (Birdsall et al. 2011).

¹ Furthermore, the two main existing international carbon markets, namely EU’s Emission Trading System (ETS) and the Kyoto generated market for CDM (CER), do not accept REDD+ credits.

REDD+ has similarities to SAP and other forms of PBA, but this experience is rarely brought into the REDD+ debate. One reason could be the poor reputation of SAP and conditional aid in many circles. REDD+ has often been driven by environmental (and climate) agencies with limited development aid experience. There is also a human faculty to think ‘this time it’s different’. But, as I will argue, most of the experiences and challenges of PBA in other sectors are highly relevant to REDD+ aid.

In this paper I first (section 2) look at the current status of REDD+, and how the concept has changed since 2007. I present the well-established *phased approach* to REDD+, which is a useful framework to understand how REDD+ can be made performance-based. Section 3 deals with PBA and five challenges, which are particularly relevant to REDD+: donor credibility due to spending pressure, performance criteria, benchmark (reference levels), mechanisms for risk sharing, and credibility related to sufficient funds being lined up behind the mechanism. Norway is the single largest REDD+ donor, and has entered bilateral agreements with four countries: Tanzania, Brazil, Guyana, and Indonesia. Section 4 provides a review and preliminary assessment of these agreements, in light of the five challenges outlined in section 3. The final section gives five brief lessons for REDD+ as PBA.

The paper focuses on incentives and the economic aspects of PBA. Another dimension only touched upon lightly is the political role of significant donor contributions, in terms of trust building, not just for bilateral relations and management of tropical forest, but for the general climate debate and UNFCCC negotiations. Aid, it is argued, has a value beyond the actual use of the funds.² A more complete analysis of this aspect is beyond the scope of this paper. There is also a broader political dimension of conditional aid related to historical donor-recipient relationships, national sovereignty of using natural resources, and Northern paternalism that I do not address.

2 What is REDD+?

An, or perhaps the, original idea of REDD+ was to create a multilevel system of payments for environmental services (PES); i.e., the climate services provided by forests in developing countries in the form of sequestering and storing carbon (Angelsen and Wertz-Kanounnikoff 2008), with the primary funding from REDD+ credits sold as offsets in a compliance carbon market. The Bali Action Plan (COP 13) (UNFCCC 2007) was, in the view of key actors, a plan to make REDD+ part of a global climate agreement where REDD+ credits could be used as offsets in a global cap and trade (CAT) system. COP 15 in Copenhagen (2009) failed to deliver that agreement. The Durban Platform (COP 17) (UNFCCC 2011) says an agreement should be ready by 2015 and take effect from 2020. In parallel to the UNFCCC process, national and regional carbon markets are evolving, with by far the largest being EU’s Emission Trading System (ETS). Yet, it remains highly uncertain to what extent carbon markets ever will become a major source of international (and possibly also national) funding for REDD+.

While UNFCCC has provided a global arena for REDD+ discussions, most of the actions have been among multilateral and bilateral donors, national and state governments, and NGOs. In this process, the key ideas of REDD+ has changed in significant ways (Angelsen and McNeill 2012):

² This aspect was highlighted during the second Oslo REDD+ Exchange, 29-30 October 2013.

2.1 From single to multiple objectives

The ultimate objective of the UNFCCC, as expressed in Article 2, is the ‘stabilization of greenhouse gas concentrations in the atmosphere, at a level that would prevent dangerous anthropogenic interference with the climate system’ (UNFCCC 1992). Initially, this was also the principal objective of REDD+, but other objectives (referred to as ‘co-benefits’ or ‘non-carbon benefits’—NCBs) have been added: protecting biodiversity, reducing poverty/enhancing local livelihoods, strengthening indigenous rights, better governance, and higher capacity for climate adaptation.³ REDD+ is also increasingly linked to the agriculture-climate agenda.

2.2 From PES to broader policies

Creating a market for forest climate services (PES) presupposes four critical elements: the existence of a quantifiable commodity or service, buyers, sellers, and a marketplace with associated rules and regulations (Angelsen 2014). These elements are not yet in place in most REDD+ countries. Designing and implementing a system that directly rewards emission reductions (and removals) by individuals, households, or groups remains a formidable challenge. Besides the many practical issues related to implementing a PES system, it also face ideological opposition. REDD+ will therefore be pursued as a broader set of national forest conservation policies (Angelsen 2009), including command-and-control (e.g. establish and better enforce protected areas) and addressing drivers (e.g. removing agricultural subsidies).

2.3 Funding: from carbon market to international public sources and national contributions

In their submissions to the UNFCCC in 2007-08, most countries argued for a dual funding approach, where public sources would provide short-term funding for capacity building, while the long-term funding for result-based payments would come from carbon markets (Guizol and Atmadja 2008). The latter has not materialized due to the lack of a global climate agreement that includes REDD+ credits, either as an offset mechanism in a compliance carbon market or indirectly through, for example, auctioning emission allowances to generate revenues for a global REDD+ fund. The major international funding for REDD+, in the short to medium term, must therefore come from public sources. Two thirds of the international public funding provided so far, has been development aid provided through bilateral and multilateral channels (Streck and Parker 2012).

Today, REDD+ should therefore be understood as a hybrid set of policies, programmes, and projects at all scales that aims to reduce emissions and increase removals (sequester carbon) from forests in developing countries. The PES idea has survived and result-based payments are seen as a key component of REDD+ policies and projects, but alongside other instruments and in a modified form.

The challenges of designing and implementing a pure PES system led to the introduction of the phased approach; i.e. three phases focusing on: (1) readiness and capacity building, (2)

³ This is also linked to the discussion on *safeguards*, which can be interpreted as having a set of minimum standards for REDD+ implementation, while the discussion of NCBs can be interpreted as a more active promotion of non-carbon objectives.

policy reforms and national REDD strategies, and (3) payments based on verified/certified emission reductions. The approach was developed through a consultative process, presented in Meridian Institute (2009), and later adopted by the UNFCCC. The phased approach is used as an organizing principle in the agreement between Norway and Indonesia. It also forms a useful background for the discussion of different performance indicators in PBA.

Table 1: The phased approach

	Phase I	Phase II	Phase III
Activities	National REDD strategy development, including, <i>inter alia</i> : -Institutional strengthening -Demonstration activities	National REDD strategy implementation, including, <i>inter alia</i> : -Land tenure reforms -Forest law enforcement -PES	Consolidation of REDD strategy implementation, including, <i>inter alia</i> : -Improved forest management -Supply chain modernization
Performance indicators	-Assessment completed -Consultations conducted -Strategy adopted -Capacity in place for implementation and monitoring	-Policies enacted -Measured enforced -Proxies monitored for changes in emissions and/or removals -GHG reductions from demonstration activities	Quantified emission reductions and/or removal enhancements (tCO ₂ e)
Financing	Immediately available	Predictable amounts over a defined period	Large-scale funding

Note: greenhouse gas (GHG).

Source: Based on Meridian Institute (2009).

3 REDD+ as performance-based aid (PBA)

3.1 Introduction

PBA has appeared under different names, but with the same underlying idea: ‘output-based aid’, ‘result-based aid’, ‘performance-based payments’, ‘aid on delivery’, ‘cash on delivery’, etc. The key element of these is ‘a contract between both parties that define incentives to produce measurable results’ (Klingebiel 2012: 3). Indeed, there is a clear trend to move from ‘promise-based’ to ‘performance-based aid’ (Öhler et al. 2012), as already reflected in the Paris Declaration on Aid Effectiveness (2005). In this paper I use ‘performance-based aid’ (PBA) as a broad term to include all forms of conditional payments, while ‘result-based payments’ is a more narrow term linked to outcomes and impacts, cf. Table 2.

Does conditionality work? An analysis of conditional lending (including SAP) by the World Bank concludes that the degree of compliance, with the conditions in the aid agreement, had *no* impact on the actual disbursement (Svensson 2003). Both donor and recipient have incentive systems, which reward reaching a high volume of resource transfer (see below). Thus many agreed with Paul Collier’s statement of the introduction, for example, Killick (1997: 493): ‘Conditionality is not an effective means of improving economic policies in recipient countries.’

Is the continued support for PBA then reflecting a political fad with appealing theoretical properties but limited empirical evidence? In a review of output-based aid (OBA) in the health sector, Eldridge and Palmer (2009) find that most studies appear to be positive to OBA, in spite of a lack of firm evidence, including the use of proper controls to measure impacts. The evidence therefore appears more anecdotal, than based on rigorous impact assessments. Some studies find, however, positive impacts. For example, a well-executed study of the Millennium Development Challenge, which is aimed to reduce corruption and enhance good governance, suggests that this conditional aid succeeded in achieving the targets (Öhler et al. 2012).

Given the theoretical attractiveness, why PBA has not been more successful? I discuss five key challenges related to the design and implementation of PBA: budget-pressure, performance criteria, baselines, uncertainty, and insufficient funding.⁴

3.2 Challenge 1: Donors eager to spend and recipients unwilling to reform

‘You simply cannot imagine how hard it is to spend money on REDD+’ (Development agency official, personal conversation, February 2011).

A possible theoretical basis for PBA is the principal-agent framework. The principal (donor) has an interest in getting an outcome (e.g. a policy reform), which is costly to undertake for the agent (recipient). This asymmetric interest between the principal and the agent forms the basis for the theory. Related to the REDD+ world, this does not imply that the REDD+ countries (agents) have no interest in undertaking REDD+ policies, but that the donor would like to see *more* action. The reason is simple: Reduced emissions produce a global public good (a benefit to both the principal and the agent), whereas the costs are borne by the agent alone. The asymmetry in interest may therefore be fully explained by the asymmetry in costs.

The solution to the problem is a conditional contract: payments are made by the principal, if and only if, the reform is undertaken by the agent. In practice, conditionality often fails due to the ‘budget-pressure system’ (Svensson 2003) of donors. Spending the budget has become a key goal, and under-spending is viewed by the public as poor planning and performance. Within organizations, bureaucrats are promoted based on disbursement and overall spending. Under-spending carries a high risk of cuts in future budgets.

The following simple, three stage game, inspired by (Mosley et al. 1991), can explain this failure of conditionality.⁵ The donor (D) and the recipient (R) have the following utility functions:

$$D = d(M, P); d_M > 0, d_P > 0 \quad (1)$$

$$R = r(M, P); r_M > 0, r_P < 0 \quad (2)$$

⁴ The challenges are mainly discussed within stylized economic frameworks, e.g. principal agent theory. Since all models are simplifications, the correct question to ask, when reading the following sections, is therefore to what extent the models give insights into key challenges in designing and implementing PBA, and *not* whether they fully represent the complex REDD+ and aid reality. (The answer to the latter is, of course: no!)

⁵ Mosley et al. (1991) and Svensson (2003) discuss several more elaborate versions of this basic structure: the degree of reforms, repeated agreements, the negotiation process, and so on, but the simple structure is sufficient to illustrate the main problem.

The donor wants policy reforms (P) ($d_P > 0$), but the recipient does not ($r_P < 0$) (otherwise, the reforms would have been implemented already). The recipient also gets a positive utility from receiving money (M) ($r_M > 0$), but—and this is critical—the donor is also interested in spending ($d_M > 0$). Thus, the two agents have a common interest in the money transfer, but conflicting interest in undertaking reforms. The game is played in three stages:

Stage 1: Negotiation of contract: The donor and the recipient agree on a set of reforms, and a sum of money to be paid after implementation of the reforms (M^1, P^1).

Stage 2: Implementation: The recipient chooses the level of policy reforms to implement (P^2).

Stage 3: Disbursement: The donor decides on how much money to disburse (M^3).

Using backward induction⁶, the sub-game perfect Nash equilibrium is straightforward, but perhaps surprising: the parties agree on the contract, the recipient undertakes *no* policy reforms ($P = 0$), and the donor pays the agreed amount ($M^3 = M^1$). Conditionality does not work.

There are two principal ways out of this dilemma for the donor: change the preferences of the donor (d_M) or of the recipient (r_P). On the donor side, a range of reforms can be undertaken to make the conditionality more credible; i.e. to change from $d_M > 0$ to $d_M < 0$. Within the organization, performance criteria of staff members could change from disbursement to documented results, perhaps even with penalties for not being tough on performance-based disbursements. This should also be carried over to the public debate, where focus should shift from aid volumes to results.

More *structural* reforms are, however, also needed. The key is to create an *opportunity cost of spending* on a country x in a year y . First, the budget pressure could be reduced if disbursement is untightened from the annual budget process, which has strong incentives to spend the annual budget allocations. Establishment of multi-year funds would reduce spending pressure. Currently, that opportunity cost is negative; i.e. not spending now is likely to lead to reduced budgets in the future.

Second, generating a positive opportunity cost for disbursements can be achieved by creating competition among recipients for scarce REDD+ funds. One option is to commit an amount of REDD+ funding to a group of countries, define a set of performance criteria, and make disbursements depend on relative performance, along the lines analyzed by Svensson (2003). Norway could, for example, when the NOK15 billion of REDD+ funding was announced in 2007, established a set of criteria for such a REDD+ tournament (see Gibson et al. 2005) on aid tournaments).

Third, donor credibility can be enhanced by making a third party responsible for assessing performance and deciding on disbursement (Gibson et al. 2005).⁷

⁶ Backward induction implies, starting at the last stage, identifying the optimal strategy given the different outcomes of the previous stage. The player at a particular stage takes into account what the response will be in the next stage. In our game, at stage 3, it will be optimal for the donor to disburse whatever the recipient did at stage 2. At stage 2, the recipient knows this and chooses not to implement the reforms.

⁷ Another possibility that can modify the result is repeated games, but it is well-known from game theory repetition that it does not automatically lead to a better outcome, e.g. Gibson et al. (2005).

A second route to change the outcome of the game is to increase the domestic willingness to undertake policy reforms (if $r_p > 0$, the principal-agent dilemma disappears). In donor circles this is referred to as recipient country governments assuming ‘ownership’ of the policy reforms (Gibson et al. 2005). In my interactions with policymakers from REDD+ donor countries, this point is often stressed and the role of country ownership is seen as a key to success. REDD+ aid should, hopefully, provide financial arguments to proponents of policy reforms in the domestic political struggles. While efforts to create country ownership to REDD+ reforms may go hand in hand with PBA, the underlying idea of PBA is, nevertheless, that the *external* incentives will provide the necessary impetus for reforms.

There are nuanced views in the literature on to what degree (conditional) aid can influence domestic policy-making. Some argue that donor conditionality plays a minor role, compared to domestic politics, in determining the choice and implementation of policy reforms (Burnside and Dollar 2000). According to Collier (2002: 7): ‘... the ‘aid for reform’ approach takes a hopelessly naïve view of the reform process and of the game being played.’

Others question the assumption of the government as a monolithic actor, which does not allow for multiple actors with different agendas. A study on conditional lending in the forestry sector concludes that: ‘The cases in this report demonstrate that under the right conditions, the World Bank has been able to catalyse key forest policy changes in the context of adjustment lending, tipping the scales toward reformist elements and away from vested interests. Under the wrong conditions, the World Bank’s efforts have been met with frustration for both it and the borrower, and have led to a stalemate in the reform agenda’ (Seymour and Dubash 2000: 2).

3.3 Challenge 2: Performance criteria and measurement

A second major issue is the selection of performance criteria and their measurements. The logical framework approach (LFA) provides a useful lens for the discussion (Table 2), and can also be linked directly to the phased approach of REDD+. Within the LFA, moving through these phases implies that donors move from supporting inputs and activities, to outputs and finally outcomes and impacts.

There are strong theoretical arguments for selecting performance criteria as far to the right in the table as possible. Reduced emissions are the primary goal of REDD+, and performance should be measured as directly as possible. Input- or process-based measures are generally poor indicators of the final impact (Mumssen et al. 2010). A good policy approved by the parliament (an outcome) will have no or limited impact, if not properly implemented. Impact-based performance indicators provide strong incentives for effective policy implementation.

Moving towards impact criteria is normally more demanding, including measurement requirements. For example, whether a forest has been legally designated as a protected area (an output) is easy to verify. Measuring the area of deforestation (output) over a specific time period is more demanding, but doable with time series of satellite images. To measure emissions (impact) one also needs emissions factors for deforestation (emissions per ha following the change in land use/cover), which requires field measurements from sample plots. In some cases, nevertheless, defining and measuring inputs or activities can be equally or more difficult. For example, an input such as ‘enforcement of community land rights’ is harder to define, monitor, and verify than an outcome such as ‘area of intact forest’.

Table 2: A result-chain illustrating the REDD+ performance criteria from input to impact

Level	Input	Activity or process	Output	Outcome	Impact
Focus	Quantities of various inputs, in values or time	Activities undertaken to produce specific outputs	Immediate/-technical results of intervention	Intermediate and mid-term effects, i.e. observable behavioral, inst. & societal changes	Broader and long term effects, often captured in sectoral statistics
Terms	Input indicators	Process indicators & milestones	Output indicators	Results indicators; Outcome indicators	Impact indicators; Goal indicators
REDD+ examples	Resources spent (USD); Technical assistance (person days)	National REDD+ plan completed; Free Prior Informed Consent (FPIC) consultations conducted	Policies adapted and enforced; No. of loggers adapted reduced impact logging practices	Reductions in deforestation; Reductions in unsustainable timber harvest	Certified/-verified changes in GHG emissions

Source: Based on Wertz-Kanounnikoff and McNeill (2012), see also Klingebiel (2012).

A further issue is the time lag between the (costs of) actions and the payments. The further along the result-chain one moves, the longer is the time lag (Wertz-Kanounnikoff and McNeill 2012). This represents a challenge for credit constrained REDD+ governments and projects, and also demands high levels of trusts, among the countries that payments eventually will be made. Other solutions may include making some up-front payments that are not result-based, and then making regular (annual) payments based on interim progress.

Finally, moving along the results-chain to the right enlarges the problems of defining benchmarks and sharing of risk, two challenges discussed further below.

3.4 Challenge 3: Benchmarks or reference levels

‘A reference level is a benchmark set so low that success is guaranteed’ (Unknown).

Any performance-based payments require a benchmark, a yardstick against which performance is measured. Establishing that benchmark or counterfactual is the critical issue, in all forms of impact analysis, also for REDD+. This problem can also be viewed as an *attribution* problem: i.e. to determine whether an output/outcome/impact is a result of the intervention or other external factors. In general, such external factors play a larger role, as one moves to the right along the result-chain, and setting benchmarks therefore becomes increasingly more difficult. Reference levels are important both for phase two (policy reforms) and phase three (reduced emissions) of REDD+, although most of the following discussion deals with phase three. For phase two, the typical assumption underlying PBA is a baseline of ‘no policy reforms’.

The term reference level (RL) (or baseline) in the REDD+ debate has two fundamentally different meanings (Angelsen 2008). First, it can refer to the projected *business as usual* (BAU) scenario, or the counterfactual scenario used in project analysis. The BAU baseline is the benchmark for estimating the impact of the REDD+ measures implemented (and ensuring additionality). Second, RL can refer to the *crediting baseline*, which is comparable to an emission quota, with one important exception; liability is limited in the way that countries (or projects) are not required to buy carbon permits if emissions are above the crediting baseline. The crediting baseline (also referred to as ‘compensation baseline’, or ‘financial incentive benchmark’) is the benchmark for rewarding the country (or project) if emissions are below that level or not giving any reward or possibly invoking debits if emissions are higher (depending on liability). Two questions therefore arise: (i) how to predict emissions from deforestation and forest degradation in a BAU scenario, and (ii) how to set the crediting baseline (CB). I address them in turn.

There is a large literature on the causes of deforestation, including economic and statistical models trying to identify and quantify factors that cause higher forest clearing (see reviews by Angelsen and Kaimowitz 1999; Geist and Lambin 2002; Rudel 2007). These models try to find causal patterns, while a predictive model is simply concerned about making a good prediction. In particular, past deforestation can be used to predict the future. Almost all proposals and UNFCCC submissions in the REDD+, RL debate suggest using historical deforestation as the starting point for setting RLs (Guizol and Atmadja 2008). The reference period is typically set to the average deforestation rate of the last ten years, and updated every three or five years (Santilli et al. 2005). This is the formula used by the Amazon Fund, and is adopted in the Norway-Brazil agreement on REDD+ from 2008.

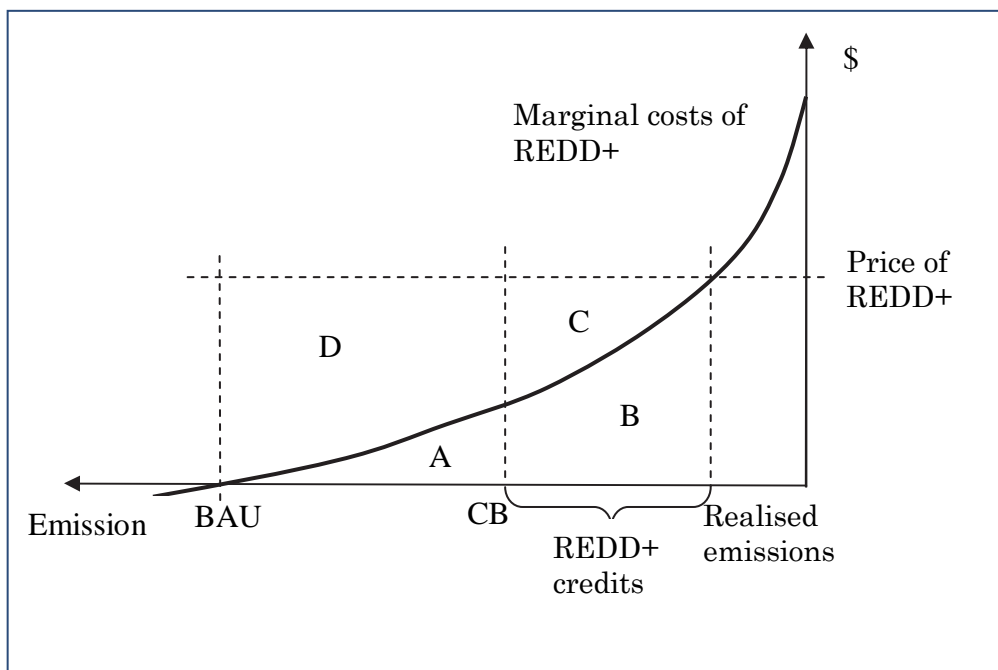
How well does past deforestation predict the future one? Deforestation can be highly variable from year to year, but can also display systematic trends over longer periods (5–10 years), which depart from past deforestation. The forest area change may follow a pattern suggested by the forest transition (FT) theory (Angelsen 2007; Mather 1992; Rudel et al. 2005), whereby at early stages in the development, a country is characterized by high forest cover and low deforestation rates. Then, deforestation rates accelerates, forest cover is reduced, before the deforestation rate slows down, forest cover stabilizes and eventually starts recovering. A simple extrapolation of historical rates therefore tends to *underestimate* future BAU deforestation for counties at the early stages in the transition, while it tends to *overestimate* BAU deforestation for countries at the later stages. The RL debate has therefore tried to find other variables to better predict deforestation.

Recent UNFCCC debates have also focussed on drivers and ‘national circumstances’; i.e. country-specific factors that can predict deforestation. The literature on cross-country deforestation regression models has included a number of variables, and some of these are potential candidates for inclusion in a formula for setting RLs (Angelsen and Kaimowitz 1999). These factors include population density and growth, forest area, economic growth, commodity prices, governance variables, and location. A key question is what ‘national circumstances’ are robust across time and space, and can be included in a future RL formula. Meridian Institute (2011) concludes that, at this stage, the empirical evidence is too weak to make such a generalized recommendation. Finding better and robust predictors of deforestation would have high policy relevance, and it is an interesting research area when better time series data of land use change at lower scales becomes available.

The second main question under the heading of reference levels is how to set the crediting baselines (CB), which forms the basis for rewarding countries, projects, or other entities for successful REDD+ efforts. The simplest solution is to set Crediting baseline = BAU baseline. This will, however, not be an optimal solution from an economic viewpoint.

A basic principle of REDD+, as introduced in the UNFCCC negotiations, was voluntary participation and ‘positive incentives’. This might be interpreted as a ‘no-lose’ principle; i.e. REDD+ countries should have a non-negative net benefit (total international REDD+ transfers, less the real costs of REDD+) from any REDD+ agreement it enters. The implication of this, for setting reference levels, is illustrated in Figure 1. A country will reduce emissions up to the point where the marginal cost equals the price (realized REDD+). This might be the credit price in a carbon market or the agreed price in a bilateral agreement (such as US\$5 per tCO₂ in the agreements between Norway and Brazil/Guyana). The total cost of these reductions is equal to the area A + B in Figure 1. A crediting baseline is given, and the country receives revenue from selling REDD+ credits for reductions beyond the crediting baseline, equal to the area B + C. Thus, the country’s net gain equals C – A. If the CB is set equal to BAU, the country will gain the area C + D; i.e. the *REDD+ rent*.

Figure 1: REDD+ marginal costs and setting crediting baselines



Source: Based on Angelsen (2008, 2014).

A key question is how far away from the BAU, the crediting baseline (CB) can be, in order for the country to still have a positive REDD+ rent. If the marginal cost curve is linear, the CB must be more than one half realized REDD. A fair assumption is that the marginal cost curve for REDD+ is convex, thus the CB can be set further to the right; i.e. it can be less than one half of the realized REDD+, and the country still benefits. In short, ‘no-lose’ can imply significant uncredited emissions reductions by developing countries. The participation constraint or no-lose principle is a requirement that $A \leq C$.

Given the participation constraint (no-lose), how should concerns about effectiveness and efficiency influence the way CB are set? In a system with a fixed amount of money to buy REDD+ credits, the total transfers are equal to the area (C+B). A lower CB implies that the carbon price can be set higher, and therefore higher emission reductions can be achieved. Thus, the participation constraint and the effectiveness is maximized when CB is set such that $A = C$.

The UNFCCC and the Bali Action Plan include the principle of ‘common but differentiated responsibilities’. The interpretation of this principle, so far, has been to divide the world in two groups, as done in the Kyoto protocol of 1997: Annex I (‘rich’) countries and non-Annex I (‘poor’) countries. Only Annex I countries take on legally binding targets, and are also expected to pay—perhaps 100 per cent—for REDD+. A further differentiation, among non-Annex I countries, is one of the most sensitive issues in the UNFCCC negotiations, although the Durban Platform of COP 17 (UNFCCC 2011) opens up for such a differentiation in future negotiations. For example, should middle-income non-Annex I countries assume legally binding emission targets for REDD+ (either in for REDD+ separately or as part of a national cap on all forms of greenhouse gas—GHG—emissions)? If yes, the CB could be set even lower so that the REDD+ countries carry some of the net REDD+ costs themselves, as part of the principle of ‘common but differentiated responsibilities’.

The discussion above takes the principal’s perspective in a principal-agent framing, where the objective is to maximize emission reductions for a given budget. REDD+ has become multi-objective, as discussed in section 2, and the primary objective of development aid is poverty reduction. Within our framework this implies that some REDD+ rent may be kept by the REDD+ countries. Further, the setting of CB will also be a matter of negotiation. Related to Figure 1, the point where $A=C$ is the lowest acceptable CB for a REDD+ country (‘no-loss’ or participation condition), while the point where $CB=BAU$ may be the highest CB acceptable to the donor (a higher reference levels will not ensure full additionality).⁸ A negotiated CB might therefore be in this interval between the two cut-off points for the donor and recipient.

3.5 Challenge 4: Uncertainty and risk sharing

In general, the REDD+ country (the agent or service provider) has less control the further to the right in Table 2 the performance criteria is located. This implies that output/output/impact based aid is shifting the risk to the service providers (Mumssen et al. 2010), but mechanisms can be designed to deal with uncertainty and ensure risk sharing.

A performance-based REDD+ system entails a number of uncertainties and consequent risks for the parties. First, a BAU baseline has several inherent uncertainties: the future values of drivers of deforestation and degradation are not known; e.g. the prices of palm oil and soybeans, and the relationship between such drivers and the agricultural land expansion into forests is uncertain. Second, the costs of avoided deforestation and degradation are uncertain; e.g. the agricultural income that could have been obtained from cleared land (output prices and technologies). Third, the effectiveness of the REDD+ policies implemented is uncertain; e.g. how farmers will respond to particular incentives, aimed to constrain forest clearing.

⁸ Due to other non-carbon objectives, the donor may even want to go beyond BAU, but ‘additionality’ is a strong principle in REDD+. Also note that the term ‘higher reference level’ refer to the absolute value of the CB; e.g. a change from -1.0 % to -1.5% is an increase.

These uncertainties can create problems for the donor and recipient. With a fixed CB, the REDD+ country risks undertaking costly REDD+ policies and not being paid in the end, because unforeseen external deforestation, drivers triumphed the REDD+ policies implemented. The donor risks paying for non-additional reductions if these drivers slowed down in unforeseen ways. Several options to deal with such uncertainties have been proposed, and these are briefly discussed in Table 3.

Table 3: Options to deal with uncertainty in setting of reference level (crediting baseline)

Option	Elaboration	Pros	Cons
1. <i>Ex-post</i> adjustment of RL	RL formula agreed, final RL set when parameters (e.g. agriculture prices) are known	Predictable, and politically robust	Hard to establish the formula
2. Corridor approach	Gradually increasing compensation within a RL corridor.	Flexible, compensation also mimics MC curve	Political acceptance
3. Tiered approach	Estimated RL multiplied by an uncertainty factor (<1), based on assessment of data quality	Reduced risk of overcompensation and hot air, incentives to produce better data	Make REDD less attractive for countries with poor data
4. Renegotiations	Renegotiate RL based an initial agreement	Flexible, can incorporate unforeseen factors	Political gaming
5. Insurance	Could design insurance contract based approaches in 1 and 2.	Well-developed markets for insurance	Probably expensive, complex formula

Source: Author's construction.

One major proposal in the REDD+ debate is the suggestion of an *ex-post* adjustment of the RL, initially proposed as the 'Compensated Successful Efforts' (Combes Motel et al. 2009). Deforestation pressures, for example, in the Brazilian Amazon is closely linked to the profitability of cattle and soybean production, and adjusting RLs, based on the prices of these commodities, should better reflect the true BAU scenario, and therefore better measure the real emissions reductions.

Another approach to deal with uncertainty is the corridor approach, proposed by Schlamadinger et al. (2005). The approach recognizes that any point estimate of the reference level is uncertain. A discount factor is therefore introduced, where deeper emissions reductions get an increasingly lower discount factor (higher compensation). The approach defines an interval (corridor) around the point estimate of the RL, with the discount factor increasing from 0 to 1 (no to full compensation) within this interval. Thus, a REDD+ country will get some compensation, even if they are unlucky and face strong deforestation drivers, making the policies less successful in reducing deforestation. A donor country will, on the other hand, not pay full compensation in the opposite case; i.e. deforestation is reduced for other reasons than successful REDD+ policies.

A third approach is a step-wise or tiered approach, the data used to calculate the RL is grouped in three different categories, and an adjustment factor reflect the degree of uncertainty, such that countries with the poorest data gets a lower RL. This is addressing one of the problems of uncertainty, namely the risk of overcompensation and producing 'fake'

REDD+ credits and hot air in a market system. Other potential ways to deal with uncertainty are contract renegotiation or insurance, although these have not been explored in the context of REDD+ RLs.

3.6 Challenge 5: Putting money behind the promise

A final challenge—in contrast to the budget-pressure (challenge 1)—is for the donor (principal) to put credible money behind the contract, such that the recipient country (agent) believes it will be rewarded fully for walking an extra mile. If the contract is not fully backed by financial resources, the payment will be a lump-sum, without the *marginal* incentives, it intends to create. For recipient countries this represents a major uncertainty, a point frequently made by REDD+ countries in the UNFCCC debates.

Current (2010) GHG emissions are in the order of 50 GtCO_{2e} (UNEP 2012). Assuming conservatively that ten per cent is related to deforestation and forest degradation, and that REDD+ achieves a 50 per cent reduction which is fully compensated (CB = historical emissions), and at a price of US\$ 5/tCO_{2e}, the annual international transfer to REDD+ countries is US\$12.5 billion. This is within the range suggested by Stern (2006) (US\$5—15 billion), and would represent roughly 1/10 of current official development aid (ODA). With crediting baselines set below the BAU baselines, and invoking the principle of ‘common but differentiated responsibilities’, the amount could be significantly lowered. Yet, a credible system of international payments for reduced emissions will require billions of dollars per year. An illustration of the amounts potentially involved, in the case of Brazil, is given in Table 5.

4 Norwegian REDD+ aid

Norway’s International Climate and Forest Initiative (NICFI) was launched at COP 13 in December 2007 in Bali. The initial pledge was NOK3 billion (approx. US\$500 million⁹) per year over five years (2008-13). The commitment period was in 2013 been extended until 2020. The total spending as of October 2012 was NOK4.4 billion, plus NOK1.9 billion set aside for spending by the Amazon Fund in Brazil.¹⁰ Major agreements have been signed with four countries, as reviewed below in chronological order: Tanzania, Brazil, Guyana, and Indonesia. In addition, a smaller agreement is signed with Mexico (NOK45 million as of October 2012), a joint partnership with UK supports the Congo Basin Forest Fund (NOK500 million), and in 2013 Ethiopia was also added as a partner country for REDD+. Norway was the midwife of the UN REDD Programme and has remained by far its largest donor (NOK669 million). Substantial funding is also channelled through the World Bank’s Forest Carbon Partnership Facility (FCPF) (NOK257 million) and Forest Investment Programme (FIP) (NOK635 million). Significant support has also been given to civil society, mainly big international NGOs, active on the REDD+ arena.

⁹ The exchange rate has since December 2007 varied between 5 and more than 7 NOK/US\$, with an average slightly below 6, cf. <http://www.oanda.com/currency/historical-rates/>

¹⁰ The funding for the Amazon Fund has later (October 2013) been transferred to the Amazon Fund. http://www.regjeringen.no/upload/MD/Vedlegg/Klima/klima_skogprosjektet/utbetalinger_totalt_okt2012.pdf

4.1 Country agreements

The contracts between Norway and the four main partner countries differ greatly, from a general agreement expressing broad objectives with non-committing formulations (Tanzania), an apparently result-based and otherwise hands-off contract (Brazil), a quite detailed performance-based contract, in a data scarce and difficult policy environment (Guyana), to a ‘model contract’ using the phased approach (Indonesia). The four contracts, placed within the phased approach, are given in Table 4.

Table 4: Types of REDD+ agreements

	Phase I: Unconditional aid	Phase II: Conditional aid	Phase III: Payment for emission reductions (PES)
Pay for what?	Build capacity, prepare REDD+ action	Policy reforms	Emission reductions
Pros	Often a necessary first step	Induce policy & structural changes	Direct incentives, ‘no cure, no pay’
Cons	Limited incentives for reduced emission	Donor credibility of conditionality, measurements	MRV, reference levels
Norwegian agreements	Tanzania, Indonesia (PI)	Guyana, Indonesia (P-II)	Brazil, Guyana, Indonesia (P-III)

Source: Author’s construction, based on the four bilateral agreements.

I also offer some arguments why the four countries were selected. A full analysis of that would also include as study of countries *not* selected, but that is beyond the scope of this paper. Bilateral discussions were, for example, held with Liberia and Papua New Guinea, but both were assessed to entail too high risks and no agreement was reached.

I will not attempt to give any assessment of the impact of the four agreements. For a preliminary assessment, see the real time evaluation of NICFI.¹¹

4.1.1 Tanzania

The *Letter of Intent* was signed on 21 April 2008, during a visit to Tanzania by the Norwegian Prime Minister (Stoltenberg) and the Minister of Environment and Development Cooperation (Solheim).¹² This was the first bilateral REDD+ agreement signed, just a few months after the NICFI was announced, and before the secretariat was established within the Ministry of Environment in Norway. The agreement is (therefore) of general nature, with an emphasis on capacity building, policy development, and preparatory activities (phase 1). The text included: ‘establishment of pilot activities for the promotion of a national REDD process’, ‘a policy review process’, ‘a comprehensive research and methodology development programme’, ‘training and educations programmes’, and ‘promote investments from and partnership with the private sector, NGOs, and research institutions and facilitate the access for formal and informal carbon markets by Tanzanian entities’. The total funding

¹¹ <http://www.regjeringen.no/nb/dep/md/tema/klima/klimaogskogprosjektet/evaluation-of-norways-international-clim.html?id=698383>

¹² http://www.norway.go.tz/News_and_events/Climate-Change/Ecc/

was to be NOK500 million over a period of five years (NOK183 million spent by October 2012).

The Norwegian Embassy in Dar es Salaam has assumed a major role in the implementation of the agreement. The reason was partly (at that time) a case of corruption, within the relevant Tanzanian ministry (Ministry of Natural Resources and Tourism—MNRT), which made a REDD+ contract directly with the ministry impossible. The embassy has made contracts for a total of nine local REDD+ pilot projects (executed by NGOs), in total NOK190 million.¹³ There has also been extensive funding for research collaboration, unlike what is included in the other agreements.

The bilateral agreement does not include any result-based mechanisms, although all the nine REDD+ pilot projects supported, have elements of result-based incentives to local communities and/or households, based on verified emissions reductions (VER).

Why Tanzania? Norway has a long history of aid collaboration with the country, and also extensive research collaboration on the primary sectors. Given the strong focus on Africa in Norwegian bilateral aid, one African country ‘had to’ be chosen for bilateral REDD+ collaboration. Combined with the public and political pressure to put the huge pledge of NOK15 billion to work quickly, an active embassy, and a long-planned high level visit (Prime Minister), the constellation of the stars was right for Tanzania to become the first REDD+ partner country of Norway. (See also the external review of the REDD+ cooperation.¹⁴)

4.1.2 Brazil

The memorandum of understanding (MoU) between Norway and Brazil was signed on 16 September 2008, for a five year period and a total funding for reducing emissions from deforestation (only RED) of US\$1 billion.¹⁵ The agreement is sharply different from the one with Tanzania. The money is transferred to the Amazon Fund (managed by the Brazilian Development Bank—BNDES), in an—at least on paper—result-based system. The MoU adopted the system set up by the Amazon Fund, which again is heavily inspired by one of the first papers launching the REDD+ idea (‘compensated reductions’) by Brazilian researchers and NGOs (Santilli et al. 2005). The system is simple: reductions in deforestation in the Amazon Biome are calculated against a historical reference level; i.e. average deforestation over the last ten years, and updated every five years. The emission factor (lost carbon per ha) is set to 100tC/ha, with a payment of US\$5/tCO₂. Given the conversion rate between CO₂ and C of 3.67, the payment for avoided deforestation is thus US\$1,833/ha.

The MoU is, compared to later agreements with Guyana and Indonesia, quite simple. The key element is the result-based payment system just described, in addition to non-committing formulations about ‘policy dialogue’, ‘cooperation’, and ‘exchange information’. A contentious issue in the negotiations leading up to the signing, was the role of international third party verification of emissions reductions, a central principle in the UNFCCC

¹³ An overview of various projects is found here: http://www.norway.go.tz/News_and_events/agreements_and_contracts/

¹⁴ http://www.regjeringen.no/upload/MD/2011/vedlegg/klimate/klimate_skogprosjektet/Evalueringsrapportene/Report_17_2010_Tanzania.pdf

¹⁵ <http://www.regjeringen.no/en/dep/md/Selected-topics/climate/the-government-of-norways-international-norway-amazon-fund.html?id=593978>

negotiations. In the end, Brazil won the tug of war, and there is no mentioning of the issue in the MoU. Interestingly, four years later (2012) the same issue resurfaced in the REDD+ negotiations during COP 18 in Doha, with the main clash being between Norway and Brazil.

The agreement between Brazil and Norway is a mix between what I have termed ‘receipt-based’ and ‘result-based’ agreement. The donor agreement (dated 26 March 2009) states that disbursements are upon ‘written requests from BNDES based on the financial needs of the Fund and on the amount of emissions reductions attested by the Technical Committee’ (Article 5.1). This can be interpreted as disbursements being whatever is lower: the actual spending *or* the results.

Initial disbursements were small as the actual spending and contracts made by the Amazon Fund were limited for several reasons: the Amazon Fund was created only in 2008, the procedures within the BNDES were complicated and made for larger projects, and contracts had to be negotiated with the project applicants.

Why Brazil? Being by far the largest tropical forest country, no support from NICFI was almost unthinkable. Several factors also contributed to the quick and large commitment of US\$1 billion to Brazil. The country was well prepared to receive money, with the Amazon Fund just established, and probably the best forest monitoring (remote sensing) system in the developing world. With a radical president in Brazil and a centre-left government in Norway, the ideological connection was right. Brazil also played the political game well; unlike what Indonesia did initially, they confessed past sins, and showed willingness to reform. This could also be backed by several policy reforms over the last few years, and a reduction of deforestation since 2004 by more than 70 per cent. In some ways, the agreement could be seen as a reward for past performance (as expressed by leading Norwegian politicians in the domestic debate). This might seem fair, but it is in conflict with the key principle of ‘additionality’; i.e. REDD+ payments should generate additional emission reductions.

4.1.3 Guyana

The MoU between Guyana and Norway was signed on 9 November 2009, with details spelled out in the regularly updated Joint Concept Note (JCN)¹⁶. The Guyana REDD+ Investment Fund (GRIF) was established, with the World Bank as the trustee and a Steering Committee, also comprising representatives from the government of the two countries, UNDP and IDB, as well as NGO observers. GRIF will receive up to US\$250 million from Norway until 2015.

The agreement is designed as a performance-based contract, both for emissions’ reductions and ‘for results on indicators of Enabling Activities’. Guyana is a ‘high-forest low-deforestation’ country; hence a reference level based on historical deforestation only does not give much scope of payments for reduced emissions. The government of Guyana stressed the risk of higher deforestation, if no measures were taken, in an infamous report prepared by McKinsey (Republic of Guyana 2008). The agreement uses a reference level as the simple mean of the *national* and the *global* historical rates of deforestation. This follows a proposal originally put forward by Achard et al (2005), elaborated by other researchers who analyze

¹⁶ Details of the agreement is found here: <http://www.regjeringen.no/en/dep/md/Selected-topics/climate/the-government-of-norways-international-/guyana-norwaypartnership.html?id=592318>

various reference levels, based on different weights, put on the two deforestation rates (Cattaneo et al. 2010; Strassburg et al. 2008).¹⁷ This has been criticized in the public debate as Guyana might be rewarded; even if deforestation rates are increasing, compared with their historical level (but not necessarily compared with a BAU scenario). The JCN contains modifications of the payment formula that accommodate some of this critique, including elements of the corridor approach discussed above.

The agreement further includes a set of ‘enabling activities’, including safeguards to protect rights of indigenous people. As noted by Wertz-Kanounnikoff and McNeill (2012), although these are described as indicators, they do not fulfil standard requirements of being specific, measureable, attainable, relevant, and time-bound (SMART). An evaluation report by the Rainforest Alliance in 2012, concluded that three out of ten verification indicators were met, four were partially met, while three were not met (Rainforest Alliance 2012). A number of other controversies have also surfaced in the debate, including the use of Norwegian funding being channelled to the Amaila Falls hydropower development and the resulting damming and deforestation from the project, defended by the opportunities it gives for a low-carbon energy development (Henders and Ostwald 2013).

Why Guyana? Guyana was an unlikely candidate for REDD+ aid from Norway, given an almost non-existing history of bilateral collaboration (in sharp contrast to Tanzania). It was ‘aid in a rush’ (Bade 2012). Two factors appear to be critical. First, Norway wanted diversity in the country portfolio, and Guyana is a representative for a number of high-forest low-deforestation countries. Mechanisms must be created to avoid them entering a stage of high deforestation, although this will not represent a reduction, compared to historical forest emissions. Second, Guyana—through an active and well-informed (ex-)president (Jagdeo)—demonstrated and convinced Minister Solheim of Norway about the political willingness to become such a showcase. Bade (2012) also identifies Prince Charles and his Rainforest Project as an important matchmaker for the engagement between the two countries.

4.1.4 Indonesia

The fourth major bilateral contract that Norway signed was with Indonesia on 26 May 2010 (the day before the REDD+ partnership was formed).¹⁸ The agreement came almost two years after Brazil, and was delayed for several reasons. Indonesia played the donor game poorly initially, showing low willingness to reform and even to ‘talk the talk’. After an extended period of consultations, which involved contentious issues, such as indigenous rights and safeguards, and the specifics of the moratorium on forest conversion, the *Letter of Intent (LoI)* was signed. The LoI had a cap of US\$1 billion for an initial period of five years (getting the same amount as Brazil was considered important for Indonesia).

In terms of structure and form, this contract is the most developed and logical, and it is modelled on the phased approach. The first preparatory stage will include several specific actions to be taken by the Indonesia: ‘completing a national REDD+ strategy’, ‘establishment of a special REDD+ agency reporting directly to the President’, ‘creating an independent

¹⁷ The underlying idea is that there is some convergence in national deforestation rates, a proposition at odds with the forest transition (FT) theory. Yet using forest cover as a factor in reference level setting seems more justified based on the FT theory, and would for high-forest countries yield a similar result, i.e., a reference level above the historical deforestation rate.

¹⁸ http://www.regjeringen.no/upload/SMK/Vedlegg/2010/Indonesia_avtale.pdf

MRV institution’, ‘designing and establishing ... a funding instrument’, and ‘selecting a province-wide REDD+ pilot’. These conditions have been met (October 2013), including the establishment of a REDD+ agency, with the head being at the ministerial level.

Phase 2, originally planned to start in January 2011, will both continue phase 1 activities, and in addition implement ‘a two-year suspension on all new concessions for conversion of peat and natural forests’. This two-year moratorium, which took effect from June 2011, covered an area of 22.5 million ha. ‘Natural forest’ was interpreted to mean ‘primary forest’ and thus excluded an area of logged and secondary forests of about twice that size (Murdiyarso et al., 2011). Also, the moratorium made exceptions for activities’ vital to national development, such as food and energy, and could do little about already granted concessions. Some observers are therefore doubtful about the impact on the ground of the moratorium, but this remains to be seen and evaluated properly. The moratorium was, in 2013, extended for another two years.

Phase 3 of the agreement is supposed to start in 2014 with a ‘national contributions-for-verified emission reductions mechanism’.

Why Indonesia? Given Indonesia’s position as the number one emitter of GHG from deforestation and forest degradation (including from peat lands), a bilateral agreement does hardly need to be justified further. For Norway, it was important to get both Brazil and Indonesia as direct partners, and Indonesia wanted to get its share of the NIFCI funding. An agreement was therefore important to both parties, and the main question became in the form and conditions of the LoI.

4.2 A preliminary assessment of the response to the five challenges

4.2.1 Donor credibility

Policy documents and statements by Norwegian government representatives have repeatedly stressed that payments are to be result-based. Yet, there is a strong pressure to spend, as lack of spending is easily seen as low efficiency and lack of success. Further, reaching the self-declared aid target of one per cent of GDP is important for Norway, in order to maintain the position as a leading donor and a ‘humanitarian superpower’.

According to Collier (2002: 8), ‘... donors are extremely badly structured to play hardball.’ Norway has no tradition for playing hardball and is considered a soft donor. However, the repeated statements about results-based payments, and the slower than planned disbursement to Guyana and Indonesia, based on slow progress in REDD+ implementation, may indicate a change. Yet, in the case of Guyana, Henders and Ostwald (2013) note the much more positive assessment by the Government of Norway, compared to the independent evaluation report, and this formed the basis of the allocation of an additional US\$45 million.

Two important structural changes are encouraging. First, the multi-year fund, established for Brazil, gives a clear positive opportunity of cost of money (i.e. later spending). Second, the authority for disbursement has been handed over to third parties (Guyana: World Bank, and

Indonesia: UNDP/UN-REDD Programme), which at least for the case of the World Bank should increase the credibility of conditionality.¹⁹

4.2.2 Performance criteria

The contracts with Brazil and Guyana have the well-defined criteria, in terms of emissions reductions: a clearly set reference level for deforestation, an emission factor (100 tC/ha) and a fixed payment (US\$5/tCO₂). A similar payment scheme is to be worked out for Indonesia (or rather: the pilot province(s)) for phase III, due to start in 2014.

The contracts of Guyana and Indonesia have a number of other performance indicators, some of which are too vague and insufficiently defined to meet standard criteria of good indicators. This has led to both later negotiations on the exact meaning (e.g. what are ‘natural forests’, for the case of the moratorium in Indonesia), and different assessments on the performance (as in the case of Guyana). The choice and definition of performance criteria and indicators therefore have some way to go, although two important limits should be noted: the political limits, in terms of being prescriptive in what a REDD+ country should do, and the technical difficulties of defining SMART measures. Wertz-Kanounnikoff and McNeill (2012) conclude that, in the end, expert judgment will be needed on, for example, governance indicators.

4.2.3 Reference levels (RL)

Reference levels for reduced emissions were worked out for Brazil and Guyana, and will be established in 2013 for Indonesia (or at least for the pilot province). Setting RL is tricky, as discussed in the section 0, and the calculated emission reductions and resulting payments can vary enormously, based on the particular formula used. Table 5: gives the amount of funding that Brazil should have been paid, according to the formula used by the Amazon Fund, which forms the basis for the MoU between Brazil and Norway. The reference level was initially based on historical deforestation for 1996-2005. Due to the rapid fall in deforestation between 2004 and 2009, Brazil should have been paid of approx. US\$2 billion per year. Thus over the initial five year period (2009-13), Brazil will be ‘earning’ REDD+ credits in the order of US\$10 billion or 10 times the promised amount (US\$1 billion).

Table 5: Result-based funding for Brazil

Year	1. Based on Actual RL (defor. last 10 years, updated every 5 years) (US\$)	2. Alternative RL (defor. last 5 years, updated annually) (US\$)
2009	2,213	1,707
2010	2,298	1,060
2011	1,814	733
2012	2,137	774
Total	8,462	4,274

Source: Author’s calculations based on deforestation data from <http://www.obt.inpe.br/>.

¹⁹ Even though, we in section 3.2 pointed to low enforcement of conditionality by the World Bank, it is reasonable to assume that the institution has a general reputation in recipient countries of being tougher than Norway.

As a hypothetical alternative, assume the reference level is set as the average of the deforestation over the last five years, and updated annually. This would for the period 2008-12 imply payments of roughly half of the payments with the current formula. The choice of formula used makes a difference of hundreds of millions, perhaps billions, per year.

The Guyana case uses a different formula, which gives the country a reference level above the historical deforestation rates. This can be defended using a forest transition approach; i.e. that BAU deforestation is likely to increase, but ‘rewarding increased deforestation’ has been hard to sell. Working out ways to reward high-forest low-deforestation countries are challenging, but the way handled in the Guyana case is one of several options.

Both the Brazil and Guyana cases illustrate the challenges of setting RLs. If the emission reductions produced are to be used as REDD+ credits and offsets in a carbon market, more scrutiny is needed to ensure additionality and avoid ‘hot air’.

4.2.4 Uncertainty and risk sharing

Uncertainty is not dealt with explicitly in any of the agreements, but is included indirectly in two different ways. First, in the Guyana case, there are elements of increasing payments for deeper emission reductions, which provides an element of risk sharing. Second, general risks and external factors are likely to enter into the equation when assessing performance, which most likely will happen for phase two (elements of) agreements.

4.2.5 Sufficient funding to make agreements credible

In the case of Guyana, careful calculation of the value of emission reductions have been made in the JCN, and payments made accordingly. In the Brazil case, Table 5 shows that the amount Brazil have earned or will earn—given the formula adopted—for the five year period 2009-13 is ten times the ceiling set in the MoU. The Brazil agreement is not credible from that perspective. It begs the question whether the agreement is result-based in practice, given that there is no way Norway can pay in full for the results.

5 Lessons learned

An important aim of the Norwegian International Climate and Forest Initiative (NICFI) is to gain experience with result-based REDD+ mechanisms, and learn lessons for a subsequent international mechanisms. The future form and size of international REDD+ mechanisms are highly uncertain; e.g. whether REDD+ funding primarily will come from a new global carbon market and/or regional/national carbon markets, from new global funds, or from bilateral (and multilateral) aid. Whatever mechanisms are to evolve, one of the success criteria of NICFI is whether it can provide such lessons. As a start, I summarize the review of the challenges of performance-based aid (PBA) and the preliminary Norwegian experience into five lessons:

5.1 REDD+ is not unique and we can learn from other forms of PBA

The problem in REDD+, Structural Adjustment Programmes, and other forms of PBA is essentially the same: A donor is using a contract backed with money to get policy reforms (phase 2) or measureable results (phase 3) in the recipient country. The challenges that arose

in other sectors are highly relevant to REDD+, but the lessons are rarely brought into the REDD+ debate. They should.

5.2 PBA is hard—don't be naïve

One important lesson is how difficult PBA is in practice. Policymakers need to have a realistic picture of the challenges and what PBA can achieve. Former Norwegian minister of environment and development cooperation, and the key person behind NICFI puts a lot of faith in PBA in his biography: 'But with results-based payments I cannot see any large risk.' (Solheim, 2013: 163—my translation).

5.3 Don't promise more than you can keep

A credible agreement needs to be backed with sufficient money. The Norway-Brazil agreement is result-based on paper, but is in practice 'receipt based', as it is the spending of the Amazon Fund that determines the level of the transfers.

5.4 Create mechanisms to increase opportunity cost of funds

The spending pressure of donors is a major reason why conditional or performance-based payments have not been credible. Donors should create mechanisms to increase the opportunity costs of funds, that is, to make it costly for themselves to spend. This will increase the credibility about their willingness to stick to the agreement. Steps to increase the opportunity costs of fund and thereby increase their credibility include creating multi-year funds, arranging competition ('aid tournaments'), or handing over disbursements to third parties with clear instructions.

5.5 Don't make all REDD+ aid performance-based

The last lesson is perhaps surprising, but an important lesson from the PBA literature. Some types of support do not easily lend themselves to clear and easy performance indicators. A minimum of non-performance-based support will also create higher predictability for recipients, a critique of PBA raised by aid recipients (Wathne and Hedgher 2009). It will also keep the door open for continued policy dialogue in situations or poor performance. As donors are unlikely to completely cut aid after agreements have been made, this would also increase the credibility of the performance-based part of the agreement. Donors should start small, with a well-designed performance-based mechanism (clear performance criteria, a credible reference level, and backed with sufficient funding), rather than putting all the eggs in the PBA basket.

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