Moving Ahead with REDD

Issues, Options and Implications

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Chapter 1

What is this book about?

Arild Angelsen and Stibniati Atmadja

1.1 REDD: Simple, yet complex

Reducing emissions from deforestation and forest degradation in developing countries (REDD) has moved to centre stage in the international climate debate over the past three years. It is commonly seen as a significant, cheap, quick and win-win way to reduce greenhouse gas (GHG) emissions; *significant* because one-fifth of global GHG emissions come from deforestation and forest degradation (DD); *cheap* because much of the DD is only marginally profitable, so, reducing GHG emissions from forests would be cheaper than most other mitigation measures; *quick* because large reductions in GHG emissions can be achieved with 'stroke of the pen' reforms and other measures not dependent on technological innovations; and *win-win* because the potentially large financial transfers and better governance can benefit the poor in developing countries and provide other environmental gains on top of the climate-related benefits.

While the details of these claims can be contested and are discussed in several chapters of this book, most observers agree that REDD is a key mechanism in global efforts to limit climate change. We need to move ahead with REDD.

In the international climate negotiations, REDD refers to a broad set of approaches and actions to reduce emissions from deforestation and forest degradation. At the core of REDD is, however, a scheme whereby the global community will create mechanisms to reward those who reduce emissions from DD. This will tap into the potential for 'significant, quick, cheap and win-win' GHG emission reductions from reducing deforestation and forest degradation.

REDD is, therefore, based around a simple idea: pay those that reduce DD. But, as with all simple ideas, turning it into action is much more complex. Alongside the enthusiasm, uneasiness is gradually growing concerning the feasibility and potentially negative implications of REDD. Many difficult questions must be addressed if we are to create an effective mechanism: How are emissions reductions to be monitored, reported and verified (MRV) if forest data are poor or do not exist? How should REDD be financed, given that a 50% cut in emissions may cost USD 20-30 billion per year? Should projects or countries, or both, be rewarded? How can we ensure that any emissions reductions are permanent – that trees saved this year will not be felled next year? How do we avoid leakage – that trees saved within a country or project area do not lead to more trees being chopped down elsewhere? How can we ensure that any credited emission reductions are real, that is, additional to what would happen without REDD? How can we ensure that REDD payments are distributed in an equitable manner and benefit the poor? These and other questions need to be addressed if we are to move ahead with REDD and agree on how REDD is to be included in a post-2012 global climate regime.

1.2 Moving ahead with REDD

This book follows a simple recipe: we lay out the key problems, present the options on how to deal with them, and then assess the options based on the '3E' criteria: **Effectiveness**: can the mechanism bring significant emission reductions? **Efficiency**: are these reductions achieved at the minimum cost? and **Equity**: are benefits and costs distributed fairly among and within countries?

The working title of the book was 'REDD – Global Architecture in the New Climate Regime'. This indicates our intention, which is to examine the design options for including REDD in the post-2012 global climate agreement currently being discussed by the United Nations Framework Convention on Climate Change (UNFCCC). We discuss the design and implementation of national and local REDD schemes only to the extent that they are relevant to the global REDD architecture. This does not imply that national and local issues are less important in REDD; rather, that they are so comprehensive and complex that they warrant another book!

A major objective of the book is to point out that, for all the important issues, there are technical options, although there are sometimes trade offs among the 3Es. But, it is not only the technical issues in REDD that are complex. Some REDD options may, for example, have strong implications for the distribution of benefits and costs across countries. The issue of baselines (reference levels) is a case in point. Baselines have a technical element, namely a realistic prediction of future DD in a business-as-usual scenario. But they also determine the level at which a country should start being credited for emissions reductions, based on the interpretation of principles such as 'common but differentiated responsibilities' and 'relevant national circumstances'. The reference levels will have a big impact on benefits and thus be a political issue.

News articles, reports and statements about REDD are published almost every day. Why write a new book on the topic? First, this book comprehensively covers all the major issues and options on the table in the UNFCCC negotiations. As far as we know, no other book dealing with these is currently available. Second, there has been a proliferation of advocates for particular REDD models, both among the UNFCCC parties (countries) as well as among environmental NGOs, research organisations and think tanks. Our modest aim is to complement such offerings and to provide, as far as possible, an objective assessment of the different options.

1.3 What this book is about

This book discusses the design options for REDD in a global climate regime. Each chapter looks at a question that UNFCCC negotiators and others involved in the global REDD debate must address.

What are the key design issues for REDD and the criteria for assessing options? Chapter 2 points to three important design issues. First, how should REDD fit in the overall UNFCCC architecture? Should it be part of a broad post-2012 climate agreement or dealt with under a separate agreement? This, the authors argue, largely depends on another question, namely how REDD should be financed, and – as part of that question – how it should be integrated with carbon markets. If, for example, REDD funding comes from compliance markets (to offset commitments of Annex I countries), then it makes better sense to include REDD in a broad post-2012 agreement.

Second, should REDD be included in an overall framework for the forest sector, and, if so, should forestry also be included in an overall accounting framework for agriculture, forestry and other land uses (AFOLU)? A key issue is whether afforestation and reforestation (A/R), currently part of the Clean Development Mechanism (CDM) under the Kyoto Protocol, should be merged with REDD in a comprehensive forest sector accounting framework.

Third, what performance measures should be used? Should the policies and measures (PAMs) that reduce emissions be counted (the input approach) or should we measure the outcomes (the output approach)? If the latter is chosen, should incentives be linked to the *absolute levels* of forest carbon stocks or to the *changes* in these stocks (equating to emissions, either positive or negative)? The emissions-based approach is in line with the current focus and accounting architecture of the UNFCCC, and is also the main proposal in current REDD negotiations. The rest of the book, therefore, focuses on this approach.

What are the costs and potentials of REDD? Chapter 3 addresses three key questions in the REDD debate. How much will REDD cost? How will REDD affect the overall strategy for reducing GHG emissions? How will REDD affect the carbon price and efforts to reduce emissions in other sectors? The author argues that REDD offers an immediate opportunity to mitigate a significant source of emissions at a relatively low cost. The cost estimates vary, from USD 7 to 28 billion per year for halving deforestation, but even the high end estimates compare favourably with the cost of most other mitigation options. Because it is low cost and has the potential to quickly reduce emissions, exploiting the REDD potential would lead to a larger global emission reduction at the same overall cost. One study finds that including REDD could reduce global warming by 0.25° C at no extra cost.

If REDD carbon credits are made fungible (interchangeable) with other carbon GHG credits, some fear carbon markets will be flooded with cheap REDD credits, suppressing other mitigation activities and long-term development of clean energy technologies. While this is a legitimate concern, some reports, such as Eliasch (2008), suggest that this fear might be overstated. Moreover, there are a number of options that could minimise this risk, including tighter overall targets, managed fungibility and 'banking of credits'.

What is the right scale for REDD? Chapter 4 reviews the three main options for international REDD accounting and crediting: (i) at subnational (or project) level; (ii) at national level; or (iii) at both levels in a nested approach. In a nested approach, countries can start with a subnational approach and scale up to a national approach over time. They may also account and receive credits at both the subnational and national levels simultaneously.

In a national approach, governments can make broad-based (and sometimes cheap) policy reforms, ensure consistency in monitoring reporting, and verifying (MRV), and account for any domestic 'leakage'. This option would also encourage better integration with national development policies and result in stronger country ownership. This option is favoured by most nations. Accounting and crediting at the subnational scale, such as the project level, is more attractive to private investors. They may prefer the tangible nature and limited scope of forest projects, and their more direct relationship with

emissions reductions. REDD projects can be undertaken even when the host country is not institutionally ready to implement REDD at the national level. The third option; the nested approach, is flexible and allows countries to combine different crediting mechanisms and to approach national-level implementation at different speeds. Nested approaches can, therefore, maximise the potential of both subnational and national approaches, although a challenge is to harmonise the two levels.

How do we match country needs with financing sources? Chapter 5 outlines the needs for REDD funding in three areas: (i) up front investments in REDD infrastructure, forest monitoring systems, capacity building and other preparatory and demonstration activities ('readiness' activities); (ii) ongoing costs of implementing national policies and measures (PAM); and (iii) compensation payments to forest owners for forgone profits (opportunity costs).

Official Development Assistance (ODA) and other forms of public funding could be a source of finance for countries with restricted access to REDD global mechanisms. Good examples are rewarding early action and giving credit for PAM. Market-linked mechanisms, such as including REDD credits in the carbon market, auctioning emission allowances, and/or fees and taxes on carbon transactions, are the most promising avenues for raising the overall volume of funding needed to exploit the REDD potential. But, financing shortfalls are likely in (i) the demonstration period for the international REDD mechanism prior to 2012 and (ii) in countries where forest governance is weak and, thus, where the investment environment is high risk. Whatever the scenario, we need to find ways to make up the shortfall in financing from both public *and* private sources. Above all, a future REDD mechanism should be open to flexible and creative financing approaches, so it can adapt to countries' changing needs and experiences.

How do we set the reference level for REDD payments? Chapter 6 distinguishes between three meanings of the word 'baseline' in the current debate. These are: (i) the *historical baseline*, that is, the rate of deforestation and degradation (DD) and the resulting GHG emissions over the past x years; (ii) the projected *business-as-usual* (BAU) scenario, that is, how would emissions from DD evolve without the REDD activity, and (iii) the *crediting baseline,* that is, the level at which REDD payments should start. A BAU baseline is the benchmark for assessing the impact of REDD measures that were implemented (and ensuring additionality), whereas the crediting baseline is the benchmark for rewarding the country (or project) if emissions are below that level. While BAU baselines can be seen as technical issues, setting crediting baselines is largely a political question.

Almost all submissions use historical deforestation as the point of departure, and most also recommend that 'national circumstances' and 'rewarding early

action' be taken into account. These principles still have to be put into practice. A key dilemma facing negotiators is that, on the one hand, generous baselines, based on 'country-by-country' assessments that take national circumstances into account, may create 'tropical hot air', which undermines the environmental integrity (overall emissions reductions) and the credibility of REDD. On the other hand, too-tight crediting baselines may make an agreement unacceptable. In short, the balancing act is between the risk of 'tropical hot air' and the participation and political acceptance of REDD countries.

How do we deal with leakage? Chapter 7 discusses one of the key concerns in the REDD debate. How can we ensure that reduced deforestation and degradation (DD) in one geographical area does not lead to more DD and higher emissions in another area? This chapter analyses the leakage of three forest-climate interactions: afforestation/reforestation, set-aside conservation areas and sustainable forest management.

There are a number of ways to deal with leakage or 'displaced emissions'. These include: (i) monitoring what is happening outside the project boundaries; (ii) moving to a higher scale of accounting and crediting, which is indeed one of the main arguments for a national approach *vis-à-vis* a subnational approach; (iii) discounting credits based on estimates of the extent of the leakage; (iv) redesigning interventions to minimise leakage; and (v) neutralising leakage with complementary activities, such as 'alternative livelihoods' components.

Leakage can therefore be accounted for and incentives can be structured to reduce leakage. At the same time, leakage is a natural part of an economy's ability to adapt. It cannot be entirely eradicated and should not be a deal breaker. In terms of equity and development, leakage may actually indicate a healthy economy, for example if, in response to REDD-induced barriers, production factors migrate to new opportunities and keep welfare losses at a minimum. Recognising trade-offs between carbon mitigation and broader development goals may thus lead us to deliberately accept some leakage and to reprioritise mitigation actions.

How do we ensure permanence and assign liability? Chapter 8 discusses another major concern in the REDD debate. How can we make sure that a forest area saved today will not be destroyed tomorrow? Who should be held liable if that happens? How can REDD contracts and financial mechanisms be designed to ensure permanence? Once liability for terrestrial carbon stocks has been assumed in an area or sector, non-permanence may still be a threat, but will have to be compensated for elsewhere. This may be the case in the future if developing countries assume emissions targets. Before this happens, we need to find interim solutions.

One aspect of ensuring permanence in projects or countries is managing risks of re-emission. Another aspect also needs to be addressed, however, if REDD mechanisms are to be credited and used for compliance in voluntary or formal (compliance) carbon markets. In this case, some system of commercial liability must be in place. This chapter provides a toolbox of the different liability mechanisms needed for achieving fungibility of carbon credits from land use and other sectors. The most attractive include: (i) project credit buffers (temporary banking of credits); (ii) pooling risk among several projects; (iii) commercial insurance; and (iv) sharing liability in the form of forest compliance partnerships (FCP) between Annex I and non-Annex I countries.

How can we monitor, report, and verify (MRV) carbon emissions from forests? Chapter 9 reviews forest monitoring technologies and the trade offs between the different methods. There are two main methods for monitoring: (i) the stock-difference approach, which measures forest carbon stocks at different points in time, and (ii) the gain-loss approach, which estimates the net balance of additions and removals from the carbon pool.

There is a trade off between the cost and the accuracy of the methods. In some countries, the need for a high level of precision requires the use of fine-resolution imagery (e.g. to detect forest degradation or small-scale deforestation), imagery repeated over time (e.g. to overcome cloud cover limitations) or imagery that requires significant expertise to process (e.g. analysing radar images), all of which come at a cost. Similarly, ground measurements, crucial to verify and measure carbon stocks, are time consuming and relatively expensive at a large scale, such as a national inventory.

Because the capacity of countries to do MRV is highly variable, a global REDD scheme must be flexible enough to avoid discriminating against countries with poor MRV capacity. A phased approach is recommended to allow for capacity building, to let countries gain experience, and to eventually integrate them into a performance-based payment mechanism in a future climate regime. Incentives should be put in place that encourage more accuracy and efficiency, and provide support for capacity building. To overcome national capacity and cost constraints, the chapter also explores the option of centralised monitoring by an international institution.

How do we measure and monitor forest degradation? Chapter 10 deals with the most difficult of the two Ds when it comes to measurement, but which is too important as a source of GHG emissions to leave out. Forest degradation can be defined as a reduction in carbon per hectare of forest (carbon density). When data are limited, the International Panel on Climate Change (IPCC) suggests that degradation accounting can start at relatively simple levels, monitoring changes in the areas of different forest types but using global default values of carbon densities. Accuracy can then be gradually increased as more national

and subnational data become available. The uncertainties inherent in simpler approaches mean that credits would need to be 'discounted'. This would be a direct incentive for countries to upgrade their measuring and monitoring methods.

Overcoming the challenges posed by carbon accounting in forest degradation by using the IPCC stock-difference and gain-loss methods, and appropriate tiers (levels of precision), means that forest degradation could be realistically included in a REDD agreement. This would make REDD more effective because it would account for a wider range of forest greenhouse gas emissions. The international equity of the REDD mechanism would also improve because a wider range of countries, many of them in Africa, would be encouraged to participate. It is, therefore, important that decisions on the MRV framework for degradation allow for a diversity of circumstances.

How do we achieve REDD co-benefits and avoid doing harm? Chapter 11 discusses one of the reasons why REDD has claimed substantial attention in international climate negotiations. REDD has the potential to alleviate poverty, protect human rights, improve governance, conserve biodiversity, and provide other environmental services (i.e. co-benefits) as well as reduce GHG emissions. However, REDD also has the potential to generate unintended negative consequences for the poor and powerless if implemented without appropriate safeguards.

This chapter links each co-benefit with specific design features at the global and national levels so that the co-benefits can be achieved without doing harm. The authors suggest that (i) integrating REDD into mainstream economic development strategies is important to ensure REDD financing will benefit the poor; (ii) performance-based payments, data transparency, financial accountability and international scrutiny could exert a positive influence on human rights and governance; and (iii) biodiversity benefits can be enhanced by geographically targeting vulnerable areas, although outcomes also depend on external factors, such as the drivers of deforestation, existing land use strategies and policies that encourage, or prohibit certain types of activities.

The challenge for the international community is to ensure that the global architecture put in place by the UNFCCC provides – and does not foreclose on – opportunities for developing countries to implement REDD in ways that deliver co-benefits without doing harm. Benefits are likely to be greatest and risks minimised if REDD financial flows and national-level implementation are harmonised with other pre-existing international commitments and emerging norms – particularly those related to procedural rights – as well as national development strategies.

Several chapters point to the very diverse circumstances of different countries in terms of MRV infrastructure, institutional capacity to implement REDD, drivers of deforestation and forest degradation, and so on. This diversity is reflected in national REDD strategies currently being developed in a number of countries. But, the global REDD architecture also needs to reflect this heterogeneity. There is no 'one size fits all'. The mechanisms must be flexible enough to ensure broad participation from the beginning. At the same time, they should also include incentives 'to move on', for example, to improve MRV and to graduate from a subnational (project) to a national level approach.

Flexibility is also needed for another reason; we cannot know for sure how mechanisms will work in practice. Although this book attempts to make some qualified assessments on the implications of various designs, REDD is a large-scale experiment. And, 'international negotiation processes are often large-scale exercises in *learning,* through which at least some parties modify their perceptions of the problem and alternative policy options and perhaps see their incentives change as well' (Underdal 2002: 5). Our aim is to contribute to this learning process.