

GOVERNING REDD: THE TDERM TRIPTYCH
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ABSTRACT:

At present, the international climate regime does not address deforestation in developing countries. Deforestation accounts for around 20% of global greenhouse gas (GHG) emissions, with the vast majority of the deforesting activity that leads to these emissions occurring within developing countries. In 2005, the Conference of the Parties to the UN Framework Convention on Climate Change (UNFCCC) began to examine how incentives for reducing emissions from deforestation and degradation (REDD) could be included in the international climate regime. An effective international REDD mechanism, under the UNFCCC or any of its related legal instruments, must address both methodological issues, such as how to monitor and verify emissions as well as central policy issues, such as how to ensure that incentive mechanisms and funding reach communities where deforestation occurs. The drivers of deforestation are multiple and complex, and often interlinked with local, national and international politics. To date, discussions have focused on the quite technical but important methodological issues. However, with the launch of the new negotiation round that occurred at the recent meeting in Bali, Indonesia at the end of 2007, negotiators will have to address core policy design elements as well.

From the perspective of sustainability, any REDD mechanism must be guided by the twin objectives of: GHG reductions and the protection of biological diversity. Furthermore, it must take into consideration the needs and concerns of indigenous and local communities and, in particular, the most vulnerable constituencies in those communities. Previous experience with other forest-related funding mechanisms demonstrates that a failure to consider the interests of these groups can, and often does, undermine the effectiveness of the mechanism. The success of a REDD mechanism is dependent upon ensuring a direct connection between the incentives offered at the international level and the activities and interests of people at the local and sub-national level, mediated by national governments. The lesson from the Kyoto Protocol's Clean Development Mechanism, where sovereignty was used as an argument against developing a mechanism to ensure that local action matched global needs, is one that needs to be learned. This paper elaborates upon the governance aspects of the Tropical Deforestation Emission Reduction Mechanism (TDERM), a proposal first tabled, by Greenpeace, at the Bali meeting.

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PART I: DEFORESTATION - FRAMING THE ISSUE

Almost 4 billion hectares (ha) or 30% of the world's land area is covered in forest.¹ During the period 2000-2005, the world lost some 13 million ha of forest per year due to deforestation.² The overall loss in total forest cover was only about half that at 7.3 million ha annually, as this net value is tempered by tree planting, landscape restoration and natural regeneration of forests on abandoned land. Nonetheless, the Food and Agriculture Organization (FAO) still concluded that deforestation is continuing at 'an alarmingly high rate'.³ Only two countries, Brazil and Indonesia, are responsible for two-thirds of this forest cover loss at 3.1 and 1.8 million ha respectively.⁴

Deforestation is an environmental concern as it results in both great loss of biodiversity and significant greenhouse gas (GHG) emissions which contribute to climate change. Climate change itself will also negatively affect forest regions, thus perpetuating this downward spiral.⁵ Tropical forests are some of the most biologically diverse regions of the world, with the highest number of species, including endemic species, overall.⁶ Globally, deforestation is responsible for around 20% of emissions,⁷ while current rates of deforestation in Brazil and Indonesia alone account for 80% of the annual emission reductions required by developed countries under the Kyoto Protocol.⁸ Any international regime serious about combating dangerous climate change must address emissions from deforestation.

The causes of deforestation are complex; vary from country to country as well as within a country over time.⁹ Causes can be divided into two categories: direct or proximate and indirect or underlying. Direct causes are physical in nature and refer to the actual process of deforesting. These include agricultural expansion, wood extraction and infrastructure development (e.g. dams, roads, human settlements). Indirect or underlying causes refer to circumstances or policies that promote or drive the direct causes of deforestation. These include demographic, economic, technology, policy or institutional and cultural

¹ FAO, *Global Forest Resources Assessment 2005: Progress Towards Sustainable Forest Management* (Rome: Food and Agriculture Organization of the United Nations, 2006) at 195 [FRA 2005].

² *Ibid.* at 13.

³ *Ibid.*

⁴ *Ibid.* at 21, 197, 201.

⁵ Millennium Ecosystem Assessment, *Ecosystems and Human Well-Being: Biodiversity Synthesis* (Washington, D.C.: World Resources Institute, 2005) [MEA 2005]; Lera Miles, Alan Grainger & Oliver Phillips, "The Impact of Global Climate Change on Tropical Forest Biodiversity in Amazonia" (2004) 13 *Global Ecology & Biogeography* 553.

⁶ MEA 2005, *ibid.*

⁷ H. Holger Rogner *et al.*, "Introduction" in Bert Metz *et al.*, eds., *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge and New York: Cambridge University Press, 2007); Raymond Gullison *et al.*, "Tropical Forests and Climate Policy" (2007) 316 *Science* 985; Navin Ramankutty *et al.*, "Challenges to Estimating Carbon Emissions from Tropical Deforestation" (2007) 13 *Global Change Biology* 51.

⁸ Marcio Santilli *et al.*, "Tropical Deforestation and the Kyoto Protocol" (2005) 71 *Climatic Change* 267 at 268.

⁹ Helmut Geist & Eric Lambin, *What Drives Tropical Deforestation? A Meta-Analysis of Proximate and Underlying Causes of Deforestation based on Subnational Case Study Evidence* (Louvain-la-Neuve, Belgium: LUCC International Project Office, 2001) [Geist & Lambin 2001].

forces. Much research focuses on only one or a handful of causes and few comprehensive reviews exist,¹⁰ thus it is difficult to get a clear picture of the drivers.

The possible proximate and underlying causes of deforestation are summarized in Figure 1. The prominence of the different causes varies regionally.¹¹ In Latin America, pasture creation for cattle ranching as well as small-scale farming aided by road construction dominate proximate causes.¹² While government policies have facilitated migration and subsidized agricultural production, insecure property rights compound the situation.¹³ In Asia, commercial logging is more prevalent, followed by cash crops, particularly oil palm and small-scale farming.¹⁴ In recent years, the skyrocketing demand for pulp in China and crude palm oil in Europe has only made the situation worse.¹⁵ Corruption, insecure land tenure, weak enforcement of forestry laws, transmigration and government support for estate agriculture (cash crops) and logging are the main underlying causes.¹⁶ In West and Central Africa, logging, fuelwood collection for domestic use and subsistence agriculture are the most frequent proximate causes.¹⁷ While weak institutions (lack of enforcement and mismanagement), migration and population are the dominant underlying causes.

¹⁰ See e.g. *ibid.* (for a meta-analysis of 152 case studies of deforestation); Arnaldo Contreras-Hermosilla, *The Underlying Causes of Forest Decline* (Bogor, Indonesia: CIFOR, 2000); UNFCCC, *Background Paper for the Workshop on Reducing Emissions from Deforestation in Developing Countries – Part II: Policy Approaches and Positive Incentive*, UN Doc. Working paper No. 1(b) (2006) [REDD Workshop Paper]; Markku Kanninen *et al.*, *Do Trees Grow on Money? The Implications of Deforestation Research for Policies to Promote REDD* (Bogor, Indonesia: CIFOR, 2007) at 15-27 (for literature reviews).

¹¹ See generally Eric Lambin & Helmut Geist, “Regional Differences in Tropical Deforestation” (2003) 45 *Environment* 22.

¹² See e.g. Philip Fearnside, “Deforestation in Brazilian Amazonia: History, Rates, and Consequences” (2005) 19 *Conservation Biology* 680D; Paulo Barreto *et al.*, *Human Pressure on the Brazilian Amazon Forests* (Washington D.C.: World Resources Institute, 2006); Daniel Nepstad *et al.*, “Road Paving, Fire Regime Feedbacks, and the Future of Amazon Forests” (2001) 154 *Forest Ecology and Management* 395; Daniel Nepstad *et al.*, “Frontier Governance in Amazonia” (2002) 295 *Science* 629.

¹³ See e.g. Hans Binswanger, “Brazilian Policies that Encourage Deforestation in the Amazon” (1991) 19 *World Development* 821; Jose Antonio Puppim de Oliveira, “Property Rights, Land Conflicts and Deforestation in the Eastern Amazon” (2008) 10 *Forest Policy and Economics* 303.

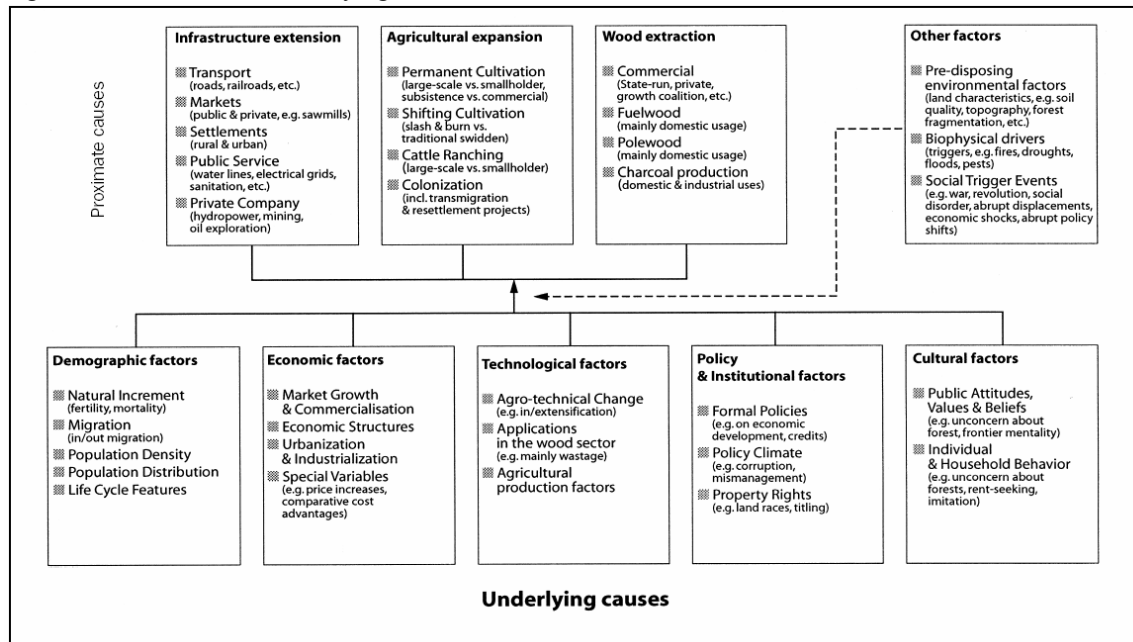
¹⁴ See e.g. Peter Leimgruber *et al.*, “Forest Cover Change Patterns in Myanmar (Burma): 1990–2000” (2005) 32 *Environmental Conservation* 356; William Sunderlin & Ida Aju Pradnja Resosudarmo, *Rates and Causes of Deforestation in Indonesia: Towards a Resolution of the Ambiguities* (Bogor, Indonesia: CIFOR, 1996); Global Forest Watch & Forest Watch Indonesia, *The State of the Forest: Indonesia* (Washington, D.C.: World Resources Institute, 2002) [GFW 2002]; Yumiko Uryu *et al.*, *Deforestation, Forest Degradation, Biodiversity Loss and CO₂ Emissions in Riau, Sumatra, Indonesia* (Jakarta: WWF Indonesia Technical Report, 2008) (though the role of small-scale agriculture in driving deforestation compared to other causes has been the subject of much controversy as noted by both Sunderlin and GFW).

¹⁵ Kanninen, *supra* note 10 at 18.

¹⁶ See e.g. GFW 2002, *supra* note 14; Julia McMorrow & Mustapa Abdul Talip, “Decline of Forest Area in Sabah, Malaysia: Relationship to State Policies, Land Code and Land Capability” (2001) 11 *Global Environmental Change* 217.

¹⁷ See e.g. Gessesse Dessie & Johan Kleman, “Pattern and Magnitude of Deforestation in the South Central Rift Valley Region of Ethiopia” (2007) 27 *Mountain Research and Development* 162; Geist & Lambin 2001, *supra* note 9.

Figure 1: Proximate and Underlying Causes of Deforestation¹⁸



A major review of case studies of deforestation concluded that: “no universal policy for controlling tropical deforestation can be conceived. Rather, a detailed understanding of the complex set of proximate causes and underlying driving forces affecting forest cover changes in a given location is required prior to any policy intervention.”¹⁹ To reduce emissions from deforestation will be no different. The Center for International Forestry Research (CIFOR) delivered a similar message at the 13th Conference of the Parties (COP13) to the Framework Convention on Climate Change (UNFCCC) when it warned that a mechanism to reduce emissions from deforestation would fail unless policy-makers were able to grasp the root causes of deforestation and the need for different solutions to address these.²⁰

The challenge is to develop a mechanism that takes into account these regional differences and interacting causes and allows for a variety of actions involving a number of actors at different levels to be implemented. While a formidable challenge in its own right, and one that must be overcome in order to reduce emissions, it is only one of many challenges that exist in designing an effective international response. The complexities of designing an international mechanism are discussed in Part III; first, a few words on how deforestation has been addressed within the context of the international climate regime are necessary.

¹⁸ Geist & Lambin 2001, *ibid.* at 16.

¹⁹ Helmut Geist & Eric Lambin, “Proximate Causes and Underlying Driving Forces of Tropical Deforestation” (2002) 52 *BioScience* 143 at 150 [Geist & Lambin 2002].

²⁰ Media Release, “New Report Warns Failure to Understand Root Causes of Deforestation Imperils New Efforts to Curb Forest-Based Carbon Emissions” (7 December 2007), online: CIFOR <http://www.cifor.cgiar.org/PressRoom/MediaRelease/2007/2007_12_07_redd.htm>.

PART II: DEFORESTATION IN THE INTERNATIONAL CLIMATE REGIME

Deforestation and how to stop it has long been on the international agenda.²¹ It was discussed in the international climate regime during the negotiations of the Framework Convention and the Kyoto Protocol, but only included in the land-use commitments of developed countries.²² Due to concerns over leakage (deforestation activities moving outside of the project boundaries), baseline uncertainties (what deforestation would have occurred in the absence of the project) and the potential to undermine incentives to reduce fossil fuels emissions by generating a large volume of low cost credits, the types of activities that could be undertaken through the Clean Development Mechanism (CDM), a flexible mechanism of the Kyoto Protocol, were limited to afforestation and reforestation.²³ Thus, reducing emissions from deforestation in developing countries (where the majority of deforestation activity occurs) was excluded from the Protocol.

At the prompting of Papua New Guinea and Costa Rica, deforestation returned to the climate agenda in 2005²⁴ and a two-year process to examine how to address reducing emissions from deforestation and degradation (REDD) was initiated.²⁵ The outcomes of this process were presented at COP13, in Bali, Indonesia, in December 2007. There countries agreed that REDD needed to be addressed and included it in the elements to be negotiated as part of a post-2012 agreement to be reached at COP15 in December 2009.²⁶ Countries also recognized the need for a more in-depth work programme on the methodological aspects of the mechanism and tasked one of the subsidiary bodies of the Convention to undertake such a work programme in 2008.²⁷

Many countries and NGOs have developed proposals on how a REDD mechanism could work. In addition to discussing methodology, a central focus of the REDD debate has been on whether financing for the mechanism should be derived from market or non-market means (e.g. a fund). This dichotomy is evident in many of the proposals in which authors often argue for one or the other approach.²⁸ The current state of discussion is

²¹ See Part IV below.

²² *United Nations Framework Convention on Climate Change*, 4 June 1992, 31 I.L.M. 848 (entered into force 21 March 1994); *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, 11 December 1997, 37 I.L.M. 22 (entered into force 16 February 2005) [*Kyoto Protocol*] at Art. 3.3. However, Art. 4.1(d) of the *Framework Convention* does contain a general obligation to “promote ... the conservation and enhancement, as appropriate, of sinks and reservoirs ... including forests...”.

²³ Bill Hare & Kirsten Macey, *Tropical Deforestation Emission Reduction Mechanism: A Discussion Paper* (Amsterdam: Greenpeace, 2007), online: Greenpeace International <<http://www.greenpeace.org/international/press/reports/TDERM-full>>.

²⁴ UNFCCC, *Reducing Emissions from Deforestation in Developing Countries: Approaches to Stimulate Action: Submissions from Parties*, UN Doc. FCCC/CP/2005/MISC.1 (2005).

²⁵ UNFCCC, *Report of the Conference of the Parties on its eleventh session, held at Montreal from 28 November to 10 December 2005. Part One: Proceedings*, UN Doc. FCCC/CP/2005/5 (2005) at paras. 80-84.

²⁶ *Bali Action Plan*, Decision 1/CP.13, UNFCCC, 2007, UN Doc. FCCC/CP/2007/6/Add.1 [Bali Action Plan] (the first commitment period of the Kyoto Protocol ends in 2012).

²⁷ *Reducing Emissions from Deforestation in Developing Countries: Approaches to Stimulate Action*, Decision 2/CP.13, UNFCCC, 2007, UN Doc. FCCC/CP/2007/6/Add.1.

²⁸ See e.g. UNFCCC, *Views on the Range of Topics and other Relevant Information relating to Reducing Emissions from Deforestation in Developing Countries. Submissions from Parties*, UN Doc. FCCC/SBSTA/2007/MISC.2 (2007) at 21-24 (Brazil); Environmental Defense Fund, *REDD Financing:*

problematic, as this ‘market vs. fund’ debate dominates, if not consumes, the entire ‘governance’ discussion. While many proposals do deal with other governance issues, it is often only in a cursory fashion, such as recognizing that capacity building will be required in order for some countries to participate or that indigenous peoples’ rights should be protected, but do not elaborate on the modalities of how either would be achieved.²⁹ At the third negotiating session of 2008 in Accra, Ghana, countries began discussing ‘policy approaches and positive incentives’ for REDD.³⁰ While some new proposals were tabled, full consideration of the governance question is still lacking. This paper seeks to contribute to broadening that discussion.

The next section seeks to elaborate some of the main governance issues necessary for an effective REDD mechanism. Part IV examines lessons learned from the CDM and how these may influence governance choices in a REDD mechanism, while Part V outlines the *Tropical Deforestation Emission Reduction Mechanism Triptych* and how it addresses the policy considerations raised.

PART III: DESIGNING A REDD MECHANISM

The scope of the mechanism and its objectives or goals must be decided upon before turning to specific governance modalities. REDD stands for reducing emissions from deforestation and degradation, yet the acronym may not be representative of the final deal. Some countries would like to expand the mechanism to include forest conservation or land-use, land-use change and forestry (LULUCF) in general.³¹ The authors posit that REDD should be dealt with separately. Specific and targeted action will be required to successfully reduce deforestation rates (and the associated emissions) and will be significantly different in nature from measures designed to support conservation, afforestation, reforestation or other land use changes. These actions can best be supported by a separate mechanism, though this mechanism could form part of a larger approach to LULUCF.

It is also important to articulate the goals of the mechanism *a priori*, as a mechanism whose sole purpose is to reduce emissions from deforestation could be structured quite differently from a mechanism whose purpose is also to protect biodiversity and the rights of indigenous peoples. The authors submit that the goals of any REDD mechanism should, at a minimum, be:

- Reducing of emissions from deforestation and degradation;³²
- Protecting biodiversity;
- Respecting the rights of indigenous peoples and local communities; and

Different Approaches for Different National Circumstances (New York: EDF, 2008), online: EDF <http://www.edf.org/documents/8306_REDDfinal_Ghana.pdf>.

²⁹ See Hare & Macey, *supra* note 23 (for a review of the main proposals).

³⁰ See online: UNFCCC <http://unfccc.int/meetings/ad_hoc_working_groups/lca/items/4488.php>.

³¹ UNFCCC, *Views on Outstanding Methodological Issues related to Policy Approaches and Positive Incentives to Reduce Emissions from Deforestation and Forest Degradation in Developing Countries. Submissions from Parties*, UN Doc. FCCC/SBSTA/2008/MISC.4 (2008) (see e.g. submissions from India and the USA).

³² *Infra* note 80 (for comments on degradation).

- Ensuring equitable distribution of the benefits of any mechanism (both between countries and within countries).

REDD Governance

The design of any REDD mechanism will be complex, given the nature of the problem, and includes both methodological and governance issues. How some of these governance questions are addressed has implications for the methodological arrangements adopted and vice versa. Methodological issues have been addressed elsewhere and due to space constraints will not be reviewed here save for a few comments about baselines (see Hare and Macey 2007 for an in-depth discussion).³³ This section outlines some of the key governance issues, including:

- the type of commitments adopted (who is committing to what and under which conditions);
- how the mechanism will be financed (including how the resources are raised, how much is required, how are resources disbursed, when and to whom);
- the activities undertaken (including the types of activities, at which level they occur (national/sub-national) and who is in control of their implementation);
- liability issues;
- capacity building; and
- the institutional arrangements necessary to oversee the mechanism.

*Type of Commitments*³⁴

A REDD mechanism may be driven by developed country compliance (i.e. reduction units generated by developing countries can be used for compliance purposes by developed countries)³⁵ or represent ‘mitigation action’ on the part of developing countries. Such mitigation action may be supported by financing, technology and capacity building from developed countries.³⁶ A combination of the two is also possible and all developing countries need not take on the same level of action. For instance, some of the more advanced developing countries may take on (no lose) targets in which any reduction up to the target constitutes their ‘mitigation action’; while any reductions

³³ *Supra* note 23.

³⁴ In the context of the international climate regime, the word ‘commitment’ can often be a politically charged term. Here we do not mean it to represent any particular course of action, simply the types of obligations, binding or non-binding and possibly supported by financial or other means, any country may adopt.

³⁵ This is not to be confused with offsetting. Offsetting refers to situations in which developed countries can avoid taking mitigation action domestically through purchasing carbon credits on the international market (the CDM is a prime example). In a compliance-driven system, developed country targets are strengthened to create the needed demand. An offset system for REDD is always possible, however given that offsetting is viewed unfavourably by many developing countries and that in order to keep warming as far below 2°C in an equitable manner, developed countries will have to take on significant domestic action, it is not considered as an option here. Furthermore, offsetting is also plagued by concerns about additionality. For the atmosphere to experience a benefit, activities that receive credit must be *additional* to those that would have occurred in the absence of a REDD mechanism. For compliance and ‘mitigation action’ driven systems there is an economic incentive to ensure that the activities are additional. These systems are linked to the effectiveness of the regime, while offsetting is linked to its environmental integrity.

³⁶ Bali Action Plan, *supra* note 26 (in Bali, developing countries agreed to consider taking on mitigation actions that was supported by financing, technology and capacity building from developed countries).

achieved beyond the target could be used by developed country compliance in exchange for financial or other support.

National governments may have limited abilities to address some of the underlying causes of deforestation due to their global nature. Collective agreement to work on some of these causes could form part of a country's REDD commitments. For instance, countries could agree to adopt national legislation preventing the sale of illegal and other destructive timber products on the market. Such action could be coordinated through existing initiatives, like Forest Law Enforcement and Governance (and Trade) (FLEG/T) that address deforestation in an auxiliary manner.³⁷ In Bali, it was agreed that both developing country 'mitigation action' and developed country technological, financial and capacity building support should be measurable, reportable and verifiable (MRV).³⁸ Consideration must be given to how to operationalize 'MRV-ing'. This will likely significantly impact the reporting requirements of developing countries.³⁹

Financing

A central focus of the REDD debate has been on whether financing for the mechanism should be derived from market or non-market means. Proponents of the markets often argue that it is the only way to raise the level of financing necessary. While there are many different estimates of the likely costs of REDD, it is clear that the scale of resources is on the order of billions of dollars per year.⁴⁰ Supporters of a non-market approach, namely the establishment of a fund to finance activities, point to the potential negative effect REDD credits may have on the market. It is anticipated that REDD credits will be inexpensive and plentiful, thus, if not controlled, these credits could flood the market and lower the price of carbon.

The market/ non-market debate is only the first rung of issues to consider with respect to financing: it is the 'where' question – where does the money come from? One must also consider who the money will go to, when, how is it transferred and how much is required. Ensuring the distribution of benefits to relevant actors is a key equity consideration and will likely be determinative for the success of REDD activities on the ground. It is also necessary to ensure those undertaking activities have access to financing as initiating REDD activity is likely to be capital intensive. Financing for these activities could be in the form of concessional loans, financing for reductions achieved could be made through direct payment or the issuances of credits for resale on a market.

³⁷ See e.g. online: World Bank <<http://www.worldbank.org/fleg>>; European Commission <<http://ec.europa.eu/environment/forests/flegt.htm>>.

³⁸ Bali Action Plan, *supra* note 26.

³⁹ See generally online: UNFCCC <http://unfccc.int/national_reports/non-annex_i_natcom/items/2716.php> (for current developing country reporting requirements).

⁴⁰ See e.g. Nicholas Stern, *The Economics of Climate Change: The Stern Review* (Cambridge: Cambridge University Press, 2007) (USD 5 billion annually and increasing over time to reduce deforestation in 8 countries responsible for 70% of the emissions from land use); UNFCCC, *Report on the Analysis of Existing and Potential Investment and Financial Flows relevant to the Development of an Effective and Appropriate International Response to Climate Change*, Dialogue Working Paper 8 (2007) (USD 12 billion in 2030 to reduce deforestation and degradation in developing countries to zero); Georg Kindermann *et al.*, "Global Cost Estimates of Reducing Carbon Emissions through Avoided Deforestation" (2008) 105 PNAS 10302 (USD 17.2-28 billion annually to reduce deforestation by 50% from 2005 to 2030).

Many REDD activities will require continual financing, as opposed to industrial projects that tend to require one-off capital expenditures. To address many of the direct causes of deforestation financing above the opportunity cost of alternative land uses will be required. As long as profitable alternative land uses are available, so must REDD financing. REDD financing can be thought of as ‘leasing’ the land for the period it is available.⁴¹ A similar situation will also be likely for measures designed to mitigate direct causes (e.g. enhanced enforcement ability). Other activities, often targeting the underlying causes, may only need to be implemented over a short period of time (e.g. removing perverse incentives from the tax regime). That said, smart policy design will always be required to avoid re-introducing perverse incentives. Financing for REDD will not, however, be required indefinitely. Possible land uses and the associated opportunity costs will change as society’s perception of the importance of forests change. Intrinsic government ability to monitor and maintain forests will also change. The point is that whichever method is chosen to raise the financing necessary, it must provide a stable, continual and sufficient flow of resources.

Activities

Reducing emissions from deforestation and degradation will require action at a number of levels (national, regional, local) and involve numerous actors (indigenous peoples, private landholders, local communities, private investors, local and municipal governments, etc), due to the complexity and interlinkages of both the proximate and underlying causes of deforestation. All seem to agree on this point. The more contentious issue, however, is how sub-national actors figure into the equation. It is possible that a national government coordinate and delegate all REDD activities within its territory, allowing sub-national actors to implement activities, but making it the only entity to interact with an international mechanism. Alternatively, national governments may allow sub-national actors to interact directly with an international mechanism (i.e. sub-national actors both implement and control activities). Under this option, consideration must also be given to the baselines that would be used for sub-national activities, associated leakage concerns and the liability these actors may face. Measuring overall reductions at the national level (national baselines) is necessary to minimize leakage (as any leakage within the country will be captured); however, this *does not* dictate the level at which REDD activities may occur.⁴² Multiple baselines may be required: national – to determine the actual reductions achieved and sub-national – to indicate the success of these activities.

Financing will be required for a multitude of REDD activities. Some sources of financing may be better suited to support different types of activities. This will often be linked to who controls the implementation of the activity. Activities whose success is dependant upon government performance tend to be less attractive to outside investment

⁴¹ UNFCCC, *Ideas and Proposals on the Subjects of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention Workshops Scheduled for 2008*, UN Doc. FCCC/AWGLCA/2008/MISC.4/Add.1 (2008) at 14 (New Zealand submission).

⁴² National baselines do not capture ‘international leakage’ (i.e. when deforesting activities move from one country to another). Other means will need to be developed to address this issue.

and thus may not be supported by all types of market design. Furthermore, some activities, especially those aimed at addressing the underlying causes of deforestation, like reforming the tax or legislative regimes to remove perverse incentives, can only be undertaken by government. Other activities, like payment for environmental services schemes, could be implemented by governments or private actors, however outside investors may only be interested in supporting the latter. Of course, if payment for the reductions achieved is only sought after the fact, performance risk is no longer a concern, and thus could be obtained from market or non-market means. However, this assumes that the entities involved were able to secure up-front financing to undertake REDD activities. Such an assumption may not hold for all countries that could participate in a REDD mechanism.

Liability

The key liability considerations relate to the consequences that ensue if deforestation rates increase after financial support has been provided. Assigning liability is most complex for a compliance-driven system and/or when sub-national actors are allowed to implement activities. In a compliance-driven system, one must determine whether it is the buyer or seller of compliance units that is liable for addressing the increasing rates. If sub-national actors have been allowed to implement activities and are successful in reducing emissions, but overall national level emissions continue to rise, one must determine who, if any, would be eligible for credits/payment. For instance, do sub-national actors receive credits/payment for successfully reducing emissions, while the national government is liable for any discrepancy with overall national emission trends? If sub-national actors are only involved in a domestic system (rather than linked to an international scheme) how liability issues are resolved is the prerogative of the national government. The national government would remain liable on the international plan.

There are a number of mechanisms that could be employed to counteract increasing rates, such as establishing a reserve of credits or some other insurance scheme. In instances of developing country 'mitigation action', the simplest approach would be to stop or reduce financial support until the country reduces rates to their previous levels. Developing countries may or may not be required to repay the support that they had previously received. Stopping all (financial) support or a stringent repayment scheme may not be advisable as part of the reason why rates may have increased is due to a lack of capacity in the country for which withdrawing support would not remedy. Finally, consideration must be given to instances when rate increases are caused by non-human agents, such as forest fires. It will be necessary to ensure that financial support is only provided when the atmosphere experiences a benefit, but that governments or other actors are not held accountable for activities beyond their control.

Institutional Arrangements

Institutional arrangements could range from rather simple to quite complex depending on the governance and methodological choices made. If financial support for reported reductions is transferred bilaterally, the UNFCCC Secretariat could potentially oversee such a system with little modification from the current structure. Alternatively, if funds to support REDD were amalgamated by single entity rather than administered bilaterally,

an entity similar to the Adaptation Fund Board may be required to manage these resources. If a market structure is chosen some entity similar to the CDM Executive Board would be required. Thought also needs to be given as to how to involve, and ensure the protection of the rights of, indigenous peoples and vulnerable communities.

Capacity

Countries in which deforestation occurs are at various stages of development and have varying abilities to both measure and actually achieve emission reductions. The varying levels of capacity must be acknowledged and accounted for in order to design an effective and equitable REDD mechanism. This may warrant different modalities for different sets of countries.

Concluding Remarks

There are a number of permutations that REDD governance could take. The discussion here has not been exhaustive but sought to outline some of the key issues and their interlinkages. Now that the various options are on the table, it may be prudent to examine past experience with forest-related initiatives and other international mechanisms to elucidate what combination of options may work best. These lessons that could be learned are the subject of Part IV.

PART IV: LESSONS TO BE LEARNED – EXAMPLES FROM THE CLEAN DEVELOPMENT MECHANISM

There are 40 legally binding instruments and 19 non-legally binding agreements and processes managed by 33 different organizations that relate to forests at the international or regional level.⁴³ Even though not all of these initiatives address the issue of deforestation directly, lessons learned from their implementation may be useful in designing the most effective REDD mechanism. For instance, a mid-term review of the World Bank's Forest Law Enforcement and Governance Program initiated in 2001 to combat illegal logging found that many countries had experienced difficulty in implementing the necessary reforms due to the sheer complexity of the issue and the politics involved.⁴⁴ Governments will likely have to go through a similar policy reform process to remove perverse incentives or develop positive ones to reduce emissions from deforestation. Other research, in this case related timber certification, has shown that small-scale producers and community groups have not participated extensively in the certification process due to the complexity of the rules.⁴⁵ These actors may face similar barriers to participation in a REDD mechanism, if REDD rules are overly complex.

⁴³ United Nations Forum on Forests, *Recent Developments in Existing Forest-related Instruments, Agreements, and Processes*, Ad hoc expert group on Consideration with a View to Recommending the Parameters of a Mandate for Developing a Legal Framework on All Types of Forests, UN Doc. Background Document 2 (2004), online: UN <<http://www.un.org/esa/forests/pdf/aheg/param/background-2.pdf>>.

⁴⁴ Arnaldo Contreras-Hermosilla, *Forest Law Enforcement and Governance Program: Review of Implementation* (Washington, D.C.: World Bank, 2007).

⁴⁵ Stephen Bass *et al.*, *Certification's Impacts on Forests, Stakeholders and Supply Chains* (London: International Institute for Environment and Development, 2001).

Often forest-related programmes, like timber certification, will have an ‘on the ground’ component and an institutional support structure. How activities have fared at the local level may be informative for the design of particular REDD activities. Experience with institutional structures is instructive for both domestic and international governance of the system. Thus, while some of the lessons learned may be more relevant for the development of domestic programmes, discussion at the international level can facilitate knowledge transfer as well as ensure its rules are most conducive to the successful implementation of activities on the ground.

Forest-related initiatives are not the only areas that could provide insight for REDD. Given the potential financial flows and possible use of the market; other multilateral mechanisms may also be worth examining. Within the climate regime, how the CDM has fared is a prime example. The CDM is one of the project-based flexible mechanisms of the Kyoto Protocol.⁴⁶ It allows developed countries to receive credit for GHG emission reductions achieved in developing countries, while developing countries receive the sustainable development benefits of the project. As a *market* mechanism, the CDM can provide insight into how the use of the market interacts with other policy aspects of a mechanism, such as achieving multiple (non-market) objectives and equitable regional distribution of projects.⁴⁷ The governance of the CDM more generally may also provide insight into which institutional arrangements work best in the context of the climate regime, independent of consideration of the market. Due to space constraints and the greater expertise of the authors in the area, the remainder of this section shall focus on the lessons that could be learned from the CDM, however a full discussion of past deforestation programmes and other forest-related initiatives would be prudent.

The Sustainable Development Benefits of the CDM?

The CDM is governed by the twin objectives of contributing to the sustainable development (SD) in the host country and reducing GHG emissions.⁴⁸ A REDD mechanism that is just and does not undermine the environmental integrity of the Convention, Protocol or post-2012 framework will also have multiple objectives: reduce emissions from deforestation, protect biodiversity and not infringe on the livelihoods and rights of the local community or indigenous people. As the CDM is market-based, it is important to determine whether or not it was able to deliver on both market and non-market objectives.

Unfortunately, many studies have shown that a trade-off between the two objectives exists wherein the desire to produce low-cost emission reductions trumps a project’s

⁴⁶ Myung-Kyoon Lee *et al.*, *CDM Information and Guidebook*, 2d ed. (Roskilde, Denmark: UNEP Risø Centre, 2004) (for an overview of the mechanism).

⁴⁷ Due to space constraints, this paper only considers some of the lessons from the CDM that could be relevant for the design and implementation of a REDD mechanism. Others include: defining additionality, access to project financing and transaction costs, modalities for small-scale projects (and the ability for communities to engage in the CDM), the efficiency and effectiveness of third party (DOE) verification, and privileges and immunities of CDM Executive Board members.

⁴⁸ *Kyoto Protocol*, *supra* note 22, Art. 12.2.

potential contribution to SD.⁴⁹ Intuitively such a conclusion should come as no surprise. SD benefits are not a monetized component of the project and thus of little value to investors except as a possible niche market.⁵⁰ Though many attempts were made to develop international criteria for assessing sustainable development during the negotiations of the Protocol, it was ultimately left to the prerogative of individual host countries to define and operationalize.⁵¹ As countries seek to attract investment there is pressure to minimize or simplify the SD component of their project approval process, thus creating a ‘race to the bottom.’⁵² While information on rejected CDM projects is often not publicly available, there seem to be very few instances of projects being rejected on the grounds of lack of SD benefits.⁵³ Furthermore, there is little incentive to ensure that even those SD benefits outlined in the Project Design Document (PDD) materialize, as there is no requirement to monitor or verify their attainment in contrast to the achievement of GHG reductions.⁵⁴ As one leading author in the field concludes: “the real problem is that the CDM works perfectly.” A market mechanism will only produce that which has economic value (in this case GHG reductions), unless the design of the mechanism clearly requires, in a measurable, reportable and verifiable manner, other deliverables.

⁴⁹ Aaron Cosbey *et al.*, *Making Development Work in the CDM: Phase II of the Development Dividend Project* (Winnipeg: International Institute for Sustainable Development, 2006); Emily Boyd *et al.*, *The Clean Development Mechanism: An Assessment of Current Practice and Future Approaches for Policy* (Norwich: Tyndall Centre for Climate Change Research, 2007); Karen Olsen, “The Clean Development Mechanism’s Contribution to Sustainable Development: A Review of the Literature” (2007) 84 *Climatic Change* 59; Christoph Sutter & Juan Parreño, “Does the Current Clean Development Mechanism (CDM) Deliver its Sustainable Development Claim? An Analysis of Officially Registered CDM Projects” (2007) 84 *Climatic Change* 75; Karen Holm Olsen & Jørgen Fenhann, “Sustainable Development Benefits of Clean Development Mechanism Projects: A New Methodology for Sustainability Assessment based on Text Analysis of the Project Design Documents submitted for Validation” (2008) 36 *Energy Policy* 2819.

⁵⁰ While there is some evidence of buyers seeking out high SD yielding projects (and paying a premium for those credits), this represents a very small segment of the market (see e.g. Karan Capoor & Philippe Ambrosi, *State and Trends of the Carbon Market 2006* (Washington, D.C.: World Bank, 2006)). A case in point, as of August 1, 2008 only 53 projects out of the 1133 registered had CDM Gold Standard approval, an NGO-supported standard that prioritizes high SD projects (see online: The Gold Standard Registry <<http://goldstandard.apx.com>>).

⁵¹ Cathleen Kelly & Ned Helme, *Ensuring CDM Project Compatibility with Sustainable Development Goals* (Washington D.C.: Center for Clean Air Policy, 2000).

⁵² Christoph Sutter, *Sustainability Check-Up for CDM Projects: How to Assess the Sustainability of International Projects under the Kyoto Protocol* (Berlin: Wissenschaftlicher Verlag, 2003).

⁵³ Martin Burian, *The Clean Development Mechanism, Sustainable Development and its Assessment*, HWWA-Report 264 (Hamburg: Hamburg Institute of International Economics, 2006) at 50; United Nations Development Programme, *The Clean Development Mechanism: An Assessment of Progress* (New York: UNDP, 2006) at 126 [UNDP 2006] (In a survey of DNAs conducted at the 2005 Carbon Expo, Burian found that of the 7 projects reported rejected, none had been rejected for reasons related to the SD component of the project. In a 2006 assessment of the CDM, UNDP also noted the lack of publicly available information on the number or reasons for project rejection; however they concluded from their experience that “there appear[s] to be few examples of projects being rejected on sustainability grounds”. That said, Morocco is known to have rejected two LULUCF/agriculture projects on the basis that they had the potential to cause serious environmental harm (UNDP Morocco, *CDM Country Assessment Study* (2004) cited in UNDP 2006).

⁵⁴ *Modalities and Procedures for a Clean Development Mechanism, as defined in Article 12 of the Kyoto Protocol*, Decision 3/CMP.1, UNFCCC, 2005, UN Doc. FCCC/KP/CMP/2005/8/Add.1 at para. 53 of Annex [Decision 3/CMP.1].

Regional Distribution

The Marrakesh Accords emphasize the need for “equitable geographic distribution of clean development mechanism project activities at regional and sub-regional levels.”⁵⁵ Much has been written about the unequal distribution of the CDM market, a brief review of the CDM pipeline⁵⁶ demonstrates why.⁵⁷ China and India dominate the market accounting for around two-thirds of the pipeline both in terms of number of projects and projected CERs produced by 2012 (See Tables 1 and 2).⁵⁸ The top five countries for both number of projects and projected CER production account for about 80% of the pipeline, while the top ten countries account for about 90%. Sub-Saharan Africa has only 1.4% of the projects and is projected to receive around 2.6% of the credits, with South Africa and Nigeria dominating in each respective category. The Least Developed Countries (LDCs) comprise only 0.8% of the total number of projects which are expected to produce 1.0% of the credits. Of the 143 non-Annex I Parties that have ratified the Protocol, only 68 have at least one project in the pipeline.⁵⁹ Of the 46 LDCs that have ratified the Protocol, only 11 have at least one project in the pipeline.⁶⁰ The CDM pipeline represents only a snapshot of the how the CDM market could develop; uncertainty exists as to whether projects will be successfully registered and ultimately implemented. Yet, a similar picture emerges if we assess the number of credits issued to date: four countries (India, China, South Korea, and Brazil) account for 89.4%.⁶¹

⁵⁵ *Modalities and Procedures for a Clean Development Mechanism, as defined in Article 12 of the Kyoto Protocol*, Decision 17/CP.7, UNFCCC, 2001, UN Doc. FCCC/CP/2001/13/Add.2.

⁵⁶ The pipeline consists of all CDM projects from the validation stage (2122), through those seeking registration (169) and those that are already registered (1033). Numbers in parenthesis represent the number of projects in each stage, as of 1 May 2008. All projects must be registered with the CDM Executive Board in order to receive credit for successfully reducing GHG emissions. See generally online: CD4CDM <<http://www.cd4cdm.org>> for more information on the pipeline.

⁵⁷ See e.g. Alan Silayan, *Equitable Distribution of CDM Projects Among Developing Countries*, HWWA-Report 255 (Hamburg: Hamburg Institute of International Economics, 2005).

⁵⁸ Jørgen Fenhann, *CDM Pipeline*, 1 May 2008 version (Roskilde, Denmark: UNEP Risø Centre, 2008), online: CD4CDM <<http://www.cd4cdm.org>>.

⁵⁹ Ratified as of May 13, 2008, see online: UNFCCC <http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php>.

⁶⁰ There are 50 LDCs, see online: UN <<http://www.un.org/special-rep/ohrls/lde/list.htm>>.

⁶¹ Fenhann, *supra* note 58.

Table 1: Top Ten Countries By Number of Projects⁶²

Host Country	Total Number of Projects	Percentage	Cumulative Percentage
1. China	1173	35.3%	35.3%
2. India	914	27.5%	62.8%
3. Brazil	277	8.3%	71.1%
4. Mexico	180	5.4%	76.5%
5. Malaysia	115	3.5%	80.0%
6. Philippines	71	2.1%	82.1%
7. Indonesia	65	2.0%	84.1%
8. Chile	52	1.6%	85.7%
9. Thailand	45	1.4%	87.1%
10. South Korea	44	1.3%	88.4%

Table 2: Top Ten Countries By Projected CER Credits in 2012⁶³

Host Country	Total Number of Projects	Percentage of CERs by 2012	Cumulative Percentage
1. China	1173	53.6%	53.6%
2. India	914	14.8%	68.4%
3. Brazil	277	6.8%	75.2%
4. South Korea	44	4.0%	79.2%
5. Mexico	180	2.6%	81.8%
6. Malaysia	115	2.4%	84.2%
7. Chile	52	1.5%	85.7%
8. Indonesia	65	1.5%	87.2%
9. Argentina	24	1.2%	88.4%
10. Nigeria	2	1.0%	89.4%

Most deforestation takes place in just two countries: Brazil and Indonesia. There is also a great range in capacity to both reduce deforestation (and the associated emissions) and monitor these reductions. Furthermore, with the exception of Brazil and India, historical data is also lacking for many countries.⁶⁴ Thus it is not unimaginable that a REDD mechanism would face similar distributional challenges to those of the CDM.

CDM Governance

The CDM is managed by an Executive Board (EB) that approves projects and issues credits. Host countries must also approve projects being implemented in their territories. This is done through the Designated National Authority (DNA). Designated Operational Entities (DOEs), independent third parties, act as the ‘extended arm’ of the EB. They validate that a project meets all of the requirements to be considered a CDM project prior to project registration as well as verify that GHG reductions have actually been achieved.

A REDD mechanism will require some kind of governance mechanism. While depending on the policy and methodological choices made, it is *possible* that oversight of a REDD mechanism could be subsumed within the current functioning of the UNFCCC Secretariat. This is not *probable*, as the size, potential financial flows involved and methodological complexity warrant governance by a distinct entity. Lessons for the functioning of the institutional arrangement surrounding the CDM may therefore be informative. Two areas: DNAs and public participation will be discussed here, though insight on the modalities of the EB and DOEs are no doubt also informative.⁶⁵

⁶² *Ibid.*

⁶³ *Ibid.*

⁶⁴ Kanninen, *supra* note 10 at 9.

⁶⁵ See e.g. Lambert Schneider, *Is the CDM Fulfilling its Environmental and Sustainable Development Objectives? An Evaluation of the CDM and Options for Improvement* (Berlin: WWF, 2007) at 19-27 (which suggests that the performance of some DOEs is sub par, thus threatening the quality of some of the projects that have been validated).

DNAs

Host country involvement in the CDM is not ‘costless’.⁶⁶ Resources are required to establish and maintain a DNA; these often come from existing government budgets. Financial and technical resource limitations are major concerns for many DNAs.⁶⁷ The main sources of financial support for DNAs are: host country coffers, donor agencies and project fees.⁶⁸ Often public servants’ DNA-related activities are in addition to their other duties. Few have full-time staff dedicated to DNA functions. Resources for dedicated staff have come from host governments or donors, however there are instances where upon the expiration of donor-supported staff positions, these positions were terminated.⁶⁹ UNDP has suggested that others may have over-invested in relation to the actual project flow.⁷⁰ In sub-Saharan Africa, 30 countries have established DNAs however only 11 have projects in the pipeline, 8 of which have no more than 2 projects.⁷¹

Host country institutional capacity for a REDD mechanism will arguably need to be greater than the CDM, if for no other reason than in addition to approving activities (if sub-national actors are allowed to participate), countries will also need to monitor and report on deforestation rates. This will likely require permanent, dedicated staff positions. Due consideration must be given to ensuring financial sustainability and technical capacity. For countries with either low levels of capacity or low rates of deforestation it may not be worth the resource-intensive effort to establish an elaborate host institutional structure. A rigorous institutional structure is necessary to ensure the environmental integrity of the mechanism, especially in a market setting. However this does not mean that these countries should not be able to access or participate in a REDD mechanism. Rather, the design of such a mechanism needs to be flexible enough to enable the participation of these countries in an efficient and effective manner.

Public Participation

The CDM contains limited modalities for public participation, namely access to information from various sources (DOEs, the EB and the UNFCCC Secretariat) and an invitation to submit comments.⁷² These provisions alone are inadequate. However, even more troubling is that not even these limited provisions are being met. An assessment of registered projects has found that the manner in which stakeholders are invited to submit comments and how these comments are considered is insufficient.⁷³ A quarter of projects only invited selected individuals or entities to comment, an approach inconsistent

⁶⁶ UNDP 2006, *supra* note 53.

⁶⁷ *Ibid.* at 121-123.

⁶⁸ However information on country-sourced data on DNA costs is severely limited: *Ibid.* at 121.

⁶⁹ *Ibid.* at 122.

⁷⁰ *Ibid.*

⁷¹ Authors’ calculation base on Fenhann, *supra* note 58 and <http://cdm.unfccc.int/DNA/index.html> (list of all the DNAs). Zimbabwe also has a DNA; however it is not a party to the Kyoto Protocol and was thus excluded from the calculations. UNDP, *ibid.* at 112 makes the same point based on an earlier version of the pipeline.

⁷² See generally Nathalie Eddy & Glenn Wiser, “Public Participation in the Clean Development Mechanism of the Kyoto Protocol” in Carl Bruch ed., *The New “Public”: The Globalization of Public Participation* (Washington, D.C.: Environmental Law Institute, 2002) 203 (for a detailed review public participation in relation to the CDM project cycle and the relevant provisions).

⁷³ Schneider, *supra* note 65.

with the broad definition of stakeholder (the “public, including individuals, groups or communities affected, or likely to be affected, by the proposed [CDM] project activity”) that are supposed to be invited.⁷⁴ Furthermore, a third of the projects did not provide information on the consultation process at all. While, there is no requirement to act upon comments received, project developers must explain how they have taken them into account.⁷⁵ In most cases, this explanation was not provided and some even appear to have ignored negative comments altogether.

During the negotiations on the Kyoto rulebook, ENGOs argued that the CDM should conform to the principles of public participation agreed to in the Aarhus Convention,⁷⁶ namely that the public should have access to the relevant information, able to participate in the decision-making and be able to appeal to an independent and impartial body for review.⁷⁷ These arguments are even more valid in a REDD context. Buy-in from the local communities is often critical to the success of forest-related projects.⁷⁸ At a minimum, public participation mechanisms for REDD should be in line with emerging norms in international law.

Conclusion Remarks

Experience with the CDM demonstrates that non-market objectives, like sustainable development benefits and equitable regional distribution, are unlikely to be met in a market setting without some kind of intervention. Institutional requirements may tax both the financial and technical resources of a participating developing country and a single structure or approach may not be appropriate for all countries. Finally the limited public participation provisions of the CDM have met with even more limited success. These are valuable lessons that the design of a REDD mechanism can benefit from learning.

PART V: A *TROPICAL DEFORESTATION EMISSION REDUCTION MECHANISM* ELABORATED

At COP13, Hare and Macey tabled a proposal for a *Tropical Deforestation Emission Reduction Mechanism* (TDERM).⁷⁹ The Mechanism is characterized by a hybrid market-linked fund, the functioning of which would meet both climate and biodiversity objectives and allow for the participation of all developing countries in which

⁷⁴ Decision 3/CMP.1, *supra* note 54.

⁷⁵ *Ibid.*

⁷⁶ *Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters*, 2161 UNTS 447, 38 ILM 517 (1999).

⁷⁷ Climate Action Network, *Public Participation in the CDM and JI* (Climate Action Network, 2000), online: CAN <<http://www.climatenetwork.org/climate-change-basics/cop-9docs/CAN-pubpartrec.pdf>>.

⁷⁸ See e.g. WWF, *Are Protected Areas Working? An Analysis of Forest Protected Areas* (Gland, Switzerland: World Wildlife Fund, 2004); Augusta Molnar, Sara Scherr & Arvind Khare, *Who Conserves the World's Forests? Community-Driven Strategies to Protect Forests and Respect Rights* (Washington, D.C.: Forest Trends and Ecoagriculture Partners, 2004) (failure to engage local communities and indigenous peoples undermines the effectiveness of protected areas).

⁷⁹ *Supra* note 23.

deforestation occurs, regardless of their level of capacity. This section seeks to elaborate on the specific governance modalities of the Mechanism in light of the policy discussion in Part III and the lessons to be learned from the CDM in Part IV.

The scope of the mechanism is limited to deforestation, though with a definition of deforestation that is broad enough to address most of the impacts of degradation.⁸⁰ The TDERM would require developed countries to purchase and hold a minimum number of Tropical Deforestation Emission Reduction Units (TDERUs) towards compliance. The required amount being equivalent to a certain percentage of their second commitment period targets (i.e. a percentage of their base year times the length of the compliance period).⁸¹ Linking the TDERM to compliance is meant to signal that developed countries are committed to reducing deforestation.

Institutional Arrangements

At the international level, the mechanism would be overseen by an Executive Committee (ExComm), under the authority and guidance of the COP or COP/MOP,⁸² while at the domestic level, each participating developing country would establish a REDD Designated National Authority (REDD DNA). The ExComm should be a professional body with permanent staff and a supervisory body comprised of government representatives to avoid the capacity issues that have plagued the CDM EB. The ExComm would be responsible for the buying and selling of credits (TDERUs) and reviewing the annual reporting from all Parties. The REDD DNA would be responsible for developing the REDD Strategy Paper (see below); coordinating the implementation of government REDD activities at the national level; approving sub-national activity, if any; and reporting to the ExComm. Country interaction with the ExComm would be along one of three tracks: the TDERM Triptych.

The three track approach reflects the varying levels of capacity in countries in which deforestation occurs and allows for the participation by all. Countries adopting a Track 1 approach are those that have sufficient technical capacity to undertake adequate monitoring, reporting and verification of emission reductions from REDD activities. National baselines will be used; however countries may choose to allow sub-national investment. Approval of sub-national activities is the prerogative of the participating country's REDD DNA. Track 2 countries are those that are not able to fulfill all of the monitoring, reporting and verification requirements of Track 1, but still possess a

⁸⁰ Emissions from forest degradation are a significant source of emissions in their own right and may act as a precursor to deforestation. However including degradation in a REDD mechanism is not without its challenges. It could create loopholes through which countries with significant quantities of degraded lands could continue to deforest by offsetting the associated emissions with new afforestation and reforestation projects on their degraded lands. Defining degradation is also an issue. Forest degradation relates to a reduction in the 'quality' of an area, not its size. A broad conservative definition of deforestation would address most, if not all, of the impacts from degradation, fragmentation and so on without burdening the current negotiations with debates over new concepts that could open anew discussions on afforestation and reforestation. That said, further work on the implications of including degradation in a REDD mechanism is necessary.

⁸¹ *Supra* note 35 (for comments on offsetting).

⁸² Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (COP/MOP).

relatively high level of technical capacity. Countries may choose to undertake REDD initiatives themselves as well as allow sub-national investment. While countries must approve of sub-national activities, this approval will be supervised by the ExComm. This approach is similar to Joint Implementation (JI) Track 2 oversight.⁸³ Track 3 countries are those that currently have little technical capacity or possess the data required for accurate monitoring, reporting and verification. Like Track 2, any sub-national activities must also be approved by the ExComm, however Track 3 countries may use simplified modalities. Track 3 may also be appropriate for countries with low rates of deforestation that anticipate minimal REDD investment and thus do not feel that a large expenditure of human and financial resources is justified.⁸⁴

International standards to ensure the protection of biodiversity and the rights of indigenous communities in the implementation of REDD activities should be developed. These standards should draw from those principles already agreed in other fora, such as the Convention on Biological Diversity and the UN Declaration on the Rights of Indigenous Peoples.⁸⁵ International standards are required, otherwise one is likely to repeat a CDM-like experience in which only the emission reduction objective is met.⁸⁶ Furthermore, there can be no justification for mandating international standards for measuring GHG reductions, but not the latter. The standards would apply to all REDD activities both national and sub-national, be initially assessed during the approval process and monitored for the duration of the activity. Financing for REDD activities is supported by the international community, thus these activities should meet international standards. As participation in a REDD mechanism is voluntary, this is not an affront on national sovereignty.

Financing

Financing for the TDERM is driven by developed country compliance, as developed countries must meet a fraction their targets with TDERUs. The price of these credits could either be established by auction or be linked to the market price for other Kyoto units. For instance, assuming a carbon price of €20/t CO₂e, a 2% REDD target from a 1990 base year would yield €9 billion/year (see Table 3). A minimum level is established to ensure that the Mechanism is adequately financed. TDERUs would be capped at a certain level to ensure that these credits do not undermine the market price of carbon.

⁸³ JI is the other project-based flexible mechanism of the Kyoto Protocol: *Guidelines for the Implementation of Article 6 of the Kyoto Protocol*, Dec. 9/CMP.1, UNFCCC, UN Doc. FCCC/KP/CMP/2005/8/Add.2 (2005) at para. 24 of Annex; see also online: UNFCCC <<http://ji.unfccc.int/Eligibility/index.html>>.

⁸⁴ See the discussion on CDM DNA resources above.

⁸⁵ 1760 UNTS 79, 31 ILM 818 (1992); GA Res. 61/295, UN GAOR, 61st Sess., UN Doc. A/61/L.67/Annex (2007).

⁸⁶ The authors of many CDM/SD studies have also called for the introduction of international SD standards for the CDM, see e.g. Olsen, *supra* note 49. The subject of improving the SD benefits from the CDM has also arisen in the context of the current negotiations: UNFCCC, *Report of the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol on its resumed fifth session, held in Bonn from 2 to 12 June 2008*, UN Doc. FCCC/KP/AWG/2008/3 (2008) at Annex II [AWGKP5.2].

Table 3: Illustrative Examples of Values of Different TDER Limits⁸⁷

% of 1990 base year Annex I industrial gas emissions (22.8 GtCO ₂ e/yr)	Value of TDERUs €Bn/yr at 20€/tCO ₂ e	TDERUs allowed MtCO ₂ e/yr	Actual deforestation emission reductions MtCO ₂ e/yr (Discount factor 3)	Deforestation reduction (in million hectares) ⁸⁸ (150 tCO ₂ e/ha)	% of deforestation reduction in comparison to average ⁸⁹
1%	4.6	228	685	1.24	10%
2%	9.1	456	1369	2.49	19%
3%	13.7	684	2054	3.73	29%
4%	18.2	912	2738	4.97	38%
5%	22.8	1140	3423	6.22	48%

There are many uncertainties, such as establishing accurate baselines, supporting additional (and not business-as-usual) activities and international leakage, that are difficult to ‘design out’ of the system. To address these concerns, the ExComm will apply a discount rate to the credits it issues. Different discount rates will be applied to credits issued under the three tracks. Developing countries able to meet a higher level of reporting, monitoring and verification (thus increasing the certainty of their measured reductions) would be subject to a lower discount rate, thus creating the incentive to improve levels of reporting, monitoring and verification over time in order to secure greater financial benefits.

The portfolio approach of the ExComm also minimizes the effect of uncertainties as they are averaged out over all REDD activities. While the ExComm would sell credits to developed countries near the average market rate, it would only ‘buy’ TDERUs from developing countries at a price closer to the actual cost of reducing emissions from deforestation plus a small profit margin. To be clear, the ExComm does not actually buy any ‘credits’ from developing countries but provides financing for the reductions achieved. The remaining resources from the price differential between ‘buying’ and selling would be used to cover the expenses of the ExComm, support capacity building efforts and finance an insurance scheme. The design on the system rests on the assumption that REDD credits will cost less to produce than other market credits.⁹⁰ The portfolio of REDD activities will be reviewed regularly by the COP or COP/MOP to ensure that the ExComm is achieving the necessary reductions for which it is issuing credits.

Sub-national actors may also participate in the mechanism if allowed by the respective national government. These actors could be other levels of government, private investors,

⁸⁷ Hare & Macey, *supra* note 23.

⁸⁸ In spite of uncertainties, it is important to transform TDERUs into hectares of rainforest – 100 and 150 tCO₂e/ha are used here to reflect the range of actual carbon content in different real tropical forest biomes; numbers shown over a 5-year period.

⁸⁹ Considering an approximate average of 13 million hectares/year (65 million ha/5-year) of gross deforestation; see FRA 2005, *supra* note 1.

⁹⁰ Some studies on how this is not an unreasonable assumption. See e.g. Brent Sohngen, Robert Beach & Kenneth Andrasko, “Avoided Deforestation as a Greenhouse Gas Mitigation Tool: Economic Issues” (2008) 37 *Journal of Environmental Quality* 1368.

community groups, indigenous peoples or civil society. The ExComm would pay national governments or sub-national actors directly for any reductions achieved after discounting. Governments would report regularly on the state of their emissions at the national level and any activities they had undertaken. Sub-national actors would report on reductions achieved through their activities. These actors would receive payment first for their reductions, with the government receiving the remainder. This creates an incentive to apply strict guidelines in the approval of sub-national activities, as sub-national activities that suffer from leakage or other problems but are still successful in obtaining reductions within the boundaries of their activities will reduce the amount of the overall payment made to the participating country for its own efforts.

The different discount rates of the various Tracks may influence the viability of sub-national level activities, especially for Track 3. This is not unfair. If a full market approach had been adopted, the countries in Track 3 would not have had the requisite level of capacity to participate. Furthermore, these countries are likely to be those that are less attractive to investors generally due to their investment climates. The TDERM strives to achieve equitable regional distribution of REDD activities and funds. It is anticipated that a larger share of the ExComm's capacity building tranche would be invested in Track 2 and 3 countries to prepare them for greater participation in the Mechanism. While Track 3 countries may have less private investment, it does not bar the government from launching its own initiatives (e.g. enhanced enforcement in parks, removing perverse incentives from the tax regime, etc). These types of activities are likely to be unattractive to private investment anyway as the outcome relies on government performance. By building these design elements into the system from the beginning, the authors strive to avoid repeating the experience under the CDM in which efforts to remedy the inequitable distribution have only been implemented after the fact.⁹¹

Financing for REDD activities may be capital-intensive in the initial stages of implementation. Project financing, especially for small-scale and more SD-oriented projects has proven quite challenging in the CDM.⁹² Under the TDERM, developed countries would be required to purchase their credits at the beginning of each year of the commitment period. Payment for credits purchased from participating developing countries (and sub-national actors) would only be made *ex post* after verification, however due to the time difference between buying and selling credits, the ExComm would have resources on hand to support capacity building initiatives as well as to provide loans to participating developing countries. This system could be modified once the ExComm achieves liquidity. To ensure accountability and transparency, funds (payment and, especially, loans) would be transferred to a REDD trust fund in the participating country. The trust fund idea is not new: it has been used in debt-for-nature swap programmes and to support domestic payment for environmental services type programmes. In the latter case, local residences demonstrated a greater willingness to participate in the programme as the establishment of the trust fund provided them with a

⁹¹ See generally online, UNFCCC <http://cdm.unfccc.int/Nairobi_Framework/index.html>.

⁹² Jane Ellis & Sami Kamel, *Overcoming Barriers to Clean Development Mechanism Projects*, Doc. COM/ENV/EPOC/IEA/SLT(2007)3 (Paris: OECD/IEA, 2007).

higher assurance that they would be compensated for their efforts.⁹³ Access for capacity building resources could be made directly by the national government or through a UN implementing agency. Precedent for this type of access is set by the Adaptation Fund.⁹⁴ Finally, the ExComm would establish a Small Grants Facility to support capacity building efforts and REDD activities at the community level.⁹⁵ Other modalities to financially support sub-national activities could also be considered.

Liability Issues

National governments bear the ultimate liability for national-level emissions; however the extent of the liability varies depending on the track. The insurance scheme and capacity building tranche cover instances where emission reductions at the national and sub-national level are not in sync. For example, if national baselines remain unchanged or increase, participating countries will not receive payment from the Mechanism (as they have produced no reductions). Successful sub-national activities, however, will continue to receive payment, though from the ExComm's insurance scheme and not the general budget. No credits will be issued or recorded in relation to this payment. There is no justification for stopping payment as these activities were approved by the national government and, for Tracks 2 & 3, the ExComm and are subject to strict discount rates. It should serve as an incentive to both entities to develop more robust REDD Strategies (see below) and more stringent uncertainty calculations. This limited liability on the part of sub-national actors could also justify applying a higher discount rate to their activities.

The extent of liability of national governments varies depending on the chosen track: the higher the track, the greater the liability. Governments in Track 1 would be required to pay back the financial support received for an increase in national emissions. Subsequent reductions achieved would be eligible for support from the Mechanism. Governments in Tracks 2 & 3 would not be required to pay back the support received, however they would be barred from participating in the Mechanism, including approving new sub-national activities, until the deforestation rates returned to previous levels. These countries would be able to access some of the ExComm's capacity building resources, more so in the case of Track 3 countries, to assist in this endeavour. Some means must be developed to ensure that governments are not held responsible for non-human events (e.g. some forest fires) that are beyond their control.

REDD Strategy Paper

“[N]o universal policy for controlling tropical deforestation can be conceived. Rather, a detailed understanding of the complex set of proximate causes and underlying driving forces affecting forest cover changes in a given location is required prior to any policy intervention.”⁹⁶ This sage advice comes from an assessment of over 150 case studies of

⁹³ Jennifer Alix-Garcia *et al.*, *An Assessment of Mexico's Payment for Environmental Services Program* (Berkeley: University of California at Berkeley, 2005).

⁹⁴ *Adaptation Fund*, Decision 1/CMP.3, UNFCCC, UN Doc. FCCC/KP/CMP/2007/9/Add.1 (2007) at para. 29; Adaptation Fund Board, *Draft Provisional Operational Policies and Guidelines for Parties to Access Resources from the Adaptation Fund*, Doc. AFB/B.3/8 (2008).

⁹⁵ A similar programme run by the Global Environmental Facility has been successful: GEF, *Joint Evaluation of the Small Grants Programme: Full Report*, Doc. GEF/ME/C.32/Inf.1 (2007).

⁹⁶ Geist & Lambin 2002, *supra* note 19 at 150.

deforestation. It is the first and most formidable challenge for implementing an effective REDD mechanism. Under the TDERM, all countries would be required to develop and submit a REDD Strategy Paper to the ExComm. The document should outline the various areas in which the country plans to undertake measures (such as policy reform) and areas in which they would welcome investment and involvement by sub-national actors, if any. Countries must also outline how these activities will conform with provisions to ensure the protection of biodiversity and the rights of indigenous and forest peoples.

The ExComm will approve the Strategy Paper for Track 2 & 3 countries; it may provide feedback on it for Track 1 countries but does not need to approve it. It is on the basis of the activities outlined in the Paper that the ExComm will disburse any upfront financing to countries. If the ExComm finds areas of concern in the Strategy Paper for Tracks 2 & 3, either it or an Implementing Agency will work with the country to resolve the issue.⁹⁷ Funding for the development of the REDD Strategy Papers will come from the capacity building tranche of the ExComm resources.

Many countries have already developed and implemented deforestation reduction plans. For them, the Strategy Paper will be more of a review exercise as well as an opportunity to examine potential roles for sub-national actors. Some have noted that one of the key weaknesses of previous plans is the lack of financing available, an area the TDERM seeks to remedy.⁹⁸ For others, the Strategy Paper may be the first time the country has attempted to develop such a plan and thus a key capacity building experience.

Ombudsman

An Ombudsman position should be created within the ExComm to monitor compliance with international standards as well as to serve as an appeals mechanism for sub-national actors. Experience with the sustainable development aspect of the CDM has shown that the market is not an effective mechanism to achieve non-market objectives. Furthermore, stakeholder involvement is lacking. REDD activities, specific those designed to address the direct causes of deforestation, are intrinsically linked to land. Land tenure conflicts have led to violent disputes in the past.⁹⁹ Thus a REDD mechanism has the potential to affect indigenous people and vulnerable communities even more so than the CDM and thus warrants higher standards and greater participation by all stakeholders.

⁹⁷ This approach is similar to that followed for the development of country programmes for the Multilateral Fund for the Implementation of the Montreal Protocol: ICF Consulting, *External Evaluation of the Financial Mechanism of the Montreal Protocol*, Open-Ended Working Group Meeting of the Parties to the Montreal Protocol, 24th Sess. (2004) at 2, online: UNEP <http://ozone.unep.org/Meeting_Documents/oewg/24oewg/MLF_External_Evaluation_D2.pdf>.

⁹⁸ See e.g. Amazon Institute for Environmental Research (IPAM), *NGO submission to UNFCCC* (2006), online: UNFCCC <http://unfccc.int/parties_and_observers/ngo/items/3689.php> (the implementation and effectiveness of some of the elements of the Brazilian government's 2004 *Deforestation Control and Prevention Action Plan for Legal Amazonia* were weakened by lack of funding).

⁹⁹ De Oliveira, *supra* note 13; Lee J. Alston, Gary D. Libecap & Bernardo Mueller, "Land Reform Policies, the Sources of Violent Conflict, and Implications for Deforestation in the Brazilian Amazon" (2000) 39 *Journal of Environmental Economics and Management* 162.

Standards are worthless without a means to enforce them. Stronger stakeholder consultation provisions should be included in the approval process of sub-national activities than those that exist for the CDM. In addition, affected communities and stakeholders should be able to petition the Ombudsman in cases in which the standards are not being met. Ideally, the Ombudsman should have the ability to halt payment to activities that do not conform to these standards. The Ombudsman should also issue an annual report detailing how standards are being met and identifying those entities – both national and sub-national – that are in non-compliance (a ‘naming and shaming’ function).

Sub-national actors and countries should have the right to appeal to the Ombudsman for a review of ExComm decisions. A similar appeals procedure has been suggested as a means to improve the CDM.¹⁰⁰ Sub-national actors would not be able to appeal to the Ombudsman in relation to Track 1 activities as this approval process is solely the prerogative of the national government. The Ombudsman could play an arbitration-type role in such instances.

Capacity Building

All developing countries will require some level of capacity building (CB) in order to participate in a REDD mechanism. Some demonstration activities have already begun and more will be needed prior to the second commitment period to test means of reducing emissions from deforestation. Furthermore, many countries will require assistance in establishing the institutional structures to monitor, report and verify REDD activities as well as the associated technical capacity.

Many have discussed the need for capacity building or readiness and pilot activities to take place pre-2013.¹⁰¹ Given the time it took countries to establish CDM DNAs, the increased technical complexity and demands of measuring and monitoring REDD activities, and the lack of data and research available in many areas, the authors contend that this is an insufficient amount of time to develop the requisite capacity to participate fully or develop an effective REDD strategy. Building such capacity requires concerted effort, a dedicated track, rather than piecemeal capacity building projects. The capacity building element of the Mechanism will ensure that countries are able to participate and assist them in graduating to a higher track. Ideally, Track 3 countries would be able to participate in Track 2 activities by the third commitment period.

Developed countries should also be required to financially support a certain level of capacity building in addition to the funds raised by the ExComm through its price differential on credits. These activities would contribute to the measuring, reporting and verifying (‘MRVing’) of capacity building required under the Bali Action Plan.¹⁰² Developed countries may choose to contribute their CB-designated resources to the ExComm to disburse or undertake their own bilateral CB-related activities. If the latter

¹⁰⁰ AWGKP5.2, *supra* note 86 at Annex III.

¹⁰¹ See e.g. UNFCCC, *Views on Issues Related to Further Steps under the Convention related to Reducing Emissions from Deforestation in Developing Countries: Approaches to Stimulate Action. Submissions from Parties*, UN Doc. FCCC/SBSTA/2007/MISC.14 (2007) at 5-6.

¹⁰² *Supra* note 26.

approach is adopted, countries would need to report on these activities annually to the ExComm. A similar approach has been used in the Multilateral Fund for the Implementation of the Montreal Protocol (MLF).¹⁰³

Graduation

A REDD mechanism will have to evolve with the climate regime, including the increasing capacity of parties to act and the changing nature of their commitments. The TDERM has an internal structure to respond to increased capacity: the three tracks (internal graduation). The TDERM is also flexible enough to respond to the changing nature of countries' commitments (external graduation). During the second commitment period, it is assumed that all developing countries for which deforestation is a concern would participate in the TDERM. In the third commitment period, some of the more advanced developing countries may take on greater commitments, closer in nature to those currently undertaken by developed countries. The TDERM is designed to respond to the uncertainties associated with measuring, monitoring and the challenges associated with a market approach. However, there is no reason why a country willing and able to adhere to Articles 3.3, 3.4 of the Kyoto Protocol and their successors on LULUCF should not be allowed to access the market directly.¹⁰⁴ This country would not participate in the TDERM. Adoption of the same LULUCF rules that govern developed countries should not prejudice other types of commitments the developing country would undertake.

The minimum level of credits required for developed country compliance would still ensure adequate capitalization to support the activities of the countries in the TDERM. The maximum level would ensure that countries outside of the Mechanism do not flood the market. To set the minimum level sufficiently high, one would need to know which countries are not participating in the mechanism ahead of time. As the overall size of the TDERM would be smaller, there would proportionally less resources for capacity building, insurance and the maintenance of the ExComm, and thus may affect some of the activities the TDERM is able to undertake.

PART VI: CONCLUDING REMARKS

At 20% of global emissions, it is imperative that the international climate regime derive some method of reducing emissions from deforestation and degradation in developing countries. To date, discussions have focused on the methodological aspects of REDD. Furthermore, what little discussion there has been of 'policy approaches and positive incentives' does not complete the picture. Deforestation has long been on the agenda of the international community, yet rates remain 'alarmingly high'. If the climate regime is serious about addressing REDD the discussion needs to be broadened to consider all design aspects and governance modalities. Leaving these to the end of the negotiations may result in some of the inefficiencies and problems encountered with the CDM. There are also numerous lessons that could be learned from past experience with other forestry initiatives as well as from the structure and governance of other international mechanisms, such as the MLF.

¹⁰³ Multilateral Fund Secretariat, *Multilateral Fund for the Implementation of the Montreal Protocol: Policies, Procedures, Guidelines and Criteria*, April 2008 version (Montreal: UNEP, 2008) at 97.

¹⁰⁴ *Supra* note 22.

In this paper, the authors have sought to outline the governance aspects that need to be considered in the development of an effective REDD Mechanism as well as examined one area which may provide insight for the design: the CDM. Through a hybrid market-linked fund, the *Tropical Deforestation Emissions Reduction Mechanism* strives to overcome two of the major failures of the CDM: inability to meet non-market goals and the lack of regional distribution. The three track approach of the Mechanism takes into consideration the varying level of capacity of the countries in which deforestation occurs and ensures that all countries will be able to participate in and benefit from the Mechanism from the beginning. It is the sovereign prerogative to decide how to address REDD, however if countries chose to access international financial support for these activities they should be required to meeting international standards to protect biodiversity and the rights of indigenous peoples and vulnerable communities. There can be no justification for mandating international standards for measuring GHG reductions, but not the latter. The failure of the CDM to create large sustainable development benefits for developing countries due to the lack of standards is a key lesson here. The standards and the Ombudsman that oversees compliance with them are the first steps to ensuring the distribution of benefits to relevant actors. Should a state allow sub-national actors to participate in the mechanism, the small grants programme and the ability of the ExComm to pay actors directly will also assist in this regard. The minimum developed country targets will ensure that the fund is adequately capitalized, while the maximum cap on credits will ensure that the market price of carbon is not adversely affected. The discount rate applied to TDERUs minimizes the concern about additionality and leakage in the Mechanism, while the insurance scheme guards against volatility in deforestation rates.

Developing a comprehensive strategy to address both the proximate and underlying causes of deforestation is the first challenge of REDD and a primary focus for national governments. The key challenge for the international community is to design a mechanism that will support these activities with sufficient and stable financing in a manner that allows all developing countries to share in these resources regardless of their level of capacity and protects biodiversity and the rights of indigenous peoples. Neither is a simple or straight forward task. Billions of dollars have already been spent trying to halt deforestation. The climate cannot afford for billions more to be squandered while millions of hectares are converted from sinks to sources. There is only one shot to get REDD right.