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Submission to the UNFCCC AWG-LCA: Views on new market-based mechanisms
Using markets for the full implementation of REDD+
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Our organizations welcome the opportunity to respond to the invitation to present views on the establishment of new market-based mechanisms (decision -/CP.16, paragraphs 80-82). This submission focuses on the use of markets for the full implementation of the REDD+ mechanism that was established by the Cancun Agreements.

Executive Summary

A global market for emission reductions that includes REDD+ will enable achievement of those reductions as effectively and efficiently as possible. Furthermore, a diverse set of funding sources, including market, market-linked and non-market REDD+ funding, will be required to realize the full mitigation and sustainable development potential of the REDD+ mechanism. Market financing can play an especially important role for REDD+ in the long -term by contributing sustainable funding at the necessary scale and efficiency. Achieving that scale of financing with public funds will be challenging due to the limits and uncertainties historically associated with public funding. REDD+ is particularly appropriate for market financing because it is poised to be a sector-wide effort to reduce emissions in developing countries. Utilizing market financing for REDD+ can also help ensure that limited public funding can be used to achieve other UNFCCC objectives such as adaptation. Market mechanisms can also promote the establishment of clear and rigorous rules and methodologies that enhance accountability and transparency and ensure performance against investments.

Introduction

The latest scientific evidence suggests that only global action that begins almost immediately and achieves large reductions in greenhouse gas (GHGs) emissions by mid-century can preserve options to avoid catastrophic disruption of the climate system. Forests in many developing countries are under continued and sometimes increasing threat of deforestation and degradation. These pressures to convert tropical forests to agriculture could escalate as high food prices translate into higher profitability of conversion. This source of emissions must be addressed immediately. Without adequate and consistent financial support for protecting and maintaining these globally vital ecosystems, actors in developing countries will often be forced to make choices based on the revenues their forests can currently produce, which in many cases come through logging and land clearing. Deforestation and degradation destroy about 13 million hectares of tropical forest per year; release about 15% of global greenhouse gases; threaten the livelihoods of indigenous peoples and forest-dependent communities worldwide; and harm biodiversity, ecosystems, and the services that they provide.

Creating an economic value for standing forests may provide the necessary long-term economic incentives for effectively protecting tropical forests and reducing emissions from deforestation and forest degradation while contributing to improved livelihoods and sustainable development. A diverse set of funding sources, including both market and non-market REDD+ funding, will be required to realize the full mitigation and sustainable development potential of the REDD+ mechanism. Non-market funding is typically needed to build capacity in countries and make the initial investments in planning, institutions, and pilot implementation, while market funding is

critical to reach the scale of financial resources needed to fully address the problem in the long term.

REDD+ Improves Cost Effectiveness of Reducing Emissions

REDD+ can make a significant contribution to cost-effectively stabilizing GHG concentrations at the scale and speed necessary to avoid the most catastrophic effects of climate change. A range of economic models demonstrates that REDD+ can play a positive role in increasing cost effectiveness, even when they start with different working assumptions. Cost and timing are two reasons why REDD+ is critically important to achieving climate goals. Because REDD+ is a near-term opportunity to mitigate a significant share of global emissions at relatively low costs (e.g. Fisher et al. 2007; Stern 2007; Rose et al. 2011), including it in climate policies could enable greater and faster emissions cuts than could be achieved for the same total costs as without REDD+. For example, a recent study finds including a global program to reduce deforestation (the first D of REDD+) within a global carbon market system lowers the estimated total costs of a policy to achieve 535 ppmv of CO2-equivalent concentrations in 2100 by up to 25 percent. Alternatively, this implies that a global RED program could enable additional reductions of about 20 ppmv by 2100 with no added costs compared with an energy-sector-only policy. (Bosetti et al. 2011).[1]

The early emissions reductions REDD+ would enable also have particular value as a global insurance policy for maintaining climatic options that avoid catastrophic climatic effects. This is important in light of scientific uncertainty surrounding the precise effects of climate change (Fisher *et al*. 2007). Linking deforestation reductions to a market-system could encourage greater reductions in the near term, maintaining options for different mitigation strategies open and allowing targets to be met ahead of schedule. It is also worth noting that REDD+ is only available as a cost-effective opportunity for reducing emissions for a limited time. With tropical forests rapidly disappearing and no way to "avoid" deforestation once it occurs, REDD+ is a time-sensitive opportunity. This is another reason to establish the most powerful financing mechanisms to protect tropical forests now.

While market financing is often seen as an opportunity for the private sector to contribute to climate action, the availability of markets determines the ability of both companies *and* governments to contribute to climate solutions in an effective and efficient way. In an effective market, both companies and governments would be able to purchase credits and thus achieve greater emission reductions more quickly than they would otherwise be able to do. Given the issues of reliability and continuity of public funding, private investment will likely be necessary for REDD+ programs to achieve their potential, lowering deforestation and forest degradation as

[1] In the United States, for example, coal-fired electricity generated 1700 billion kWh, emitting ~0.8kg/kWh, or about 1.4 billion tons CO2 in 2009. At a REDD+ cost of $10 per ton CO2, the U.S. utility coal fleet of power plants could offset 100% of their CO2 emissions for roughly $14 billion per year. Coal carbon capture and storage (CCS), by contrast would exceed $100 per ton to retrofit coal plants and over $50 per ton applied to new coal plants. This would raise the cost of electricity five to 10 times more than REDD+ opportunities. These are illustrative numbers since many old coal plants would be shut down before being retrofitted, and some CO2 mitigation options like end-use efficiency improvements are cheaper even than REDD+. Still, carbon cost curves calculated by McKinsey (Global GHG Cost Abatement Curve, v2.1, August 2010) showcase the prominent role of REDD+ as the largest pool of least-cost options through 2030, without even considering the utility offset option.

they supply cost-effective offsets to future regulated entities operating within market-based systems.

Impacts of Including REDD+ in Carbon Markets

REDD+ is particularly well-suited for inclusion in market mechanisms. With developing countries making progress towards national REDD+ programs and systems, REDD+ has the potential to be the first sector-wide effort to limit emissions in non-Annex I countries. Furthermore, significant work has already been undertaken on REDD+ methodologies under SBSTA and under standards such as the Verified Carbon Standard (VCS). As such, REDD+ is poised to be able to contribute rigorous, verifiable credits.

A well-functioning market requires clear and rigorous rules and methodologies in order to instill confidence that credits represent real reductions in emissions. Well-designed methodologies contribute to market-based systems that reward performance and integrity. These standards and methodologies enhance accountability and transparency and ensure performance against investments.

Private investment will be critical to the success of REDD+. In order to stimulate early private investment, options for risk management should be explored. These could include public sector risk insurance, using emissions reductions already achieved for carbon insurance buffers, or allocating funds to buffer private investment risk.

REDD+ incentive mechanisms should encourage the largest-scale, nearest-term emissions reductions possible, and should consider means to encourage first-mover countries to initiate and sustain reductions in deforestation.

The economic impact of REDD+ depends on the overall climate targets and policy architecture, the design and implementation of REDD+ and the fungibility of REDD+ credits with the rest of the GHG market. Though concerns have been raised about the potential risk of REDD+ supply 'flooding' the carbon market, those risks can be contained in a number of ways, including through policy and market design, ambitious global mitigation actions, adoption of strict and long-term targets with 'banking' and, if necessary, limits on the use of REDD+ and other types of credits. When long-term targets are sufficiently ambitious and anticipated, regulated entities could have an incentive to over-comply with current requirements and save or "bank" these excess reductions for use in later periods when prices might be higher, as is likely the case with tightening commitments to reduce emissions. As a result, in carbon market analyses where banking is permitted, reductions are achieved faster and the estimated carbon prices are generally higher in the near term and lower in the long term compared to a case without the flexibility to trade emission reductions across time. Long-term targets combined with banking are thus potentially powerful drivers of greater financing for REDD+ and other cost-effective mitigation actions available in the near term.

Early REDD+ Financing

In the early phases of REDD+, which include phase 1 and phase 2[2] as established by the Cancun Agreements, public investment in building readiness will be needed to get REDD+ off the ground. There is an urgent need for a dedicated funding stream to support activities such as the establishment of credible reference levels, development of robust and accurate monitoring systems, strengthening of national institutions, consultations, improvement of forest governance, and development of programs to channel funds to actors at the local level. These resources may be generated in various ways, including through new and additional official development assistance (ODA) and market-linked approaches such as dedicating portions of allowance value within cap-and-trade systems. As countries increase their REDD+ readiness and begin to implement emissions reduction activities, additional public funding may be needed to provide up-front capital for implementation, buffer the risk of early actions, facilitate market access for higher-risk countries, implement early emission reductions and catalyze private investment. All of this adds up to significant need for REDD+ financing, particularly in phases 1 and 2, from non-market sources.

Fortunately, public funding is not the only option for financing REDD+; inclusion of other sources of finance can help the global community more effectively achieve its REDD+ and other climate goals. Historically, there have been real limits on the ability of public funding from developed countries to achieve international development and other goals. This is due in part to the fact that public funding is often dependent on annual or biannual budget appropriations, which can depend on the political environment, economic crises and other realities of the day. These realities do not lighten the obligation developed countries have to support climate mitigation and adaptation in developing countries or to meet their existing development assistance commitments. Some developed countries have already demonstrated their support for REDD+ by making financial commitments and deployments. However, the magnitude of these commitments needs to be increased.

It is clear we need to look beyond public funding if we are going to generate the level of financing necessary for addressing climate change and to ensure that finance is deployed in a sustainable and predictable way. Using market finance for REDD+ will enable the prioritization of limited public funding for areas such as adaptation that may not be able to make use of market finance or draw on the private sector in the same way. The more quickly that countries can implement their REDD+ national plans, and move to phase 3 where they are paid for national level emission reductions, the sooner the market can make a significant contribution in paying for REDD+. Once countries reach phase 3, they would be able to access market finance if they so choose.

[2] "The development of national strategies or action plans, policies and measures, and capacity-building," and "the implementation of national policies and measures and national strategies or action plans that could involve further capacity-building, technology development and transfer and results-based demonstration activities" (Cancun Agreement on Long-term Cooperative Action)

REDD+ in the Voluntary Carbon Market

During 2008 and 2009, the voluntary carbon market transacted about 200 million tons of CO_2e offsets, worth more than $1 billion USD (Hamilton et al. 2010). In 2009, forestry based credits accounted for 24% of total market activity, more than double that of 2008, with 9% coming from REDD projects, triple the previous year's volume. Recognition of the importance of REDD+ in policy arenas and confidence in best-practice standards frameworks has helped propel this growth. Recognition of co- benefits such as sustainable development and biodiversity conservation has spurred private investment in REDD+.

A 2010 survey of the leading corporate buyers indicated that carbon standards and co-benefits are the most important factors driving purchasing decisions of forest carbon offsets (EcoSecurities 2010). The Verified Carbon Standard (VCS) and Climate, Community & Biodiversity Standards (CCBS) are the most popular international standards for forestry projects, typically being used together to generate verified emissions reductions while providing assurances about a project's social and environmental co-benefits. With the VCS approval of four new REDD methodologies over the past six months and a pipeline of dozens of REDD+ projects in development, the voluntary market for REDD+ is expected to grow significantly this year. This activity should provide valuable lessons learned and help inform the development of potential future compliance carbon markets.

Long-term REDD+ Financing

Once countries have the capacity to generate compliance grade emission reductions,[3] market approaches to REDD+ financing offer great potential to provide the large-scale level of funding needed to reduce deforestation and forest degradation emissions globally over a sustained period of time. Clarity is needed as soon as possible that countries will gain market access once they have the capacity to generate additional, permanent, and verified compliance-grade emission reductions. This market certainty is necessary to motivate countries to make the large initial investments needed to develop robust monitoring, reporting, and verification systems. Similarly, developed countries may be reluctant to provide public funding for phase 1 and 2 of REDD+ without certainty that there will be sufficient financing for implementation at scale. Providing that certainty may help unlock additional and sustainable public funding. Clarity on the role market finance will play in REDD+ is also needed to ensure that countries invest in the types of MRV and other systems that will be necessary if they want to access market finance, since market financing will require more rigorous demonstration that results have been achieved than other financing sources. REDD+ credits generated through such rigorous and verifiable methodologies should be fungible with emissions reductions from other sectors. Within a global framework of ambitious emissions reductions, REDD+ can and should help industrialized countries take on deeper and earlier emission reduction targets. A REDD+ framework needs to contribute to an emissions trajectory that keeps global warming as far below 2 degrees Celsius as possible.

[3] In order to qualify, activities would need to be designed to ensure additionality and permanence, as well as comply with strong monitoring, reporting, and verification provisions.

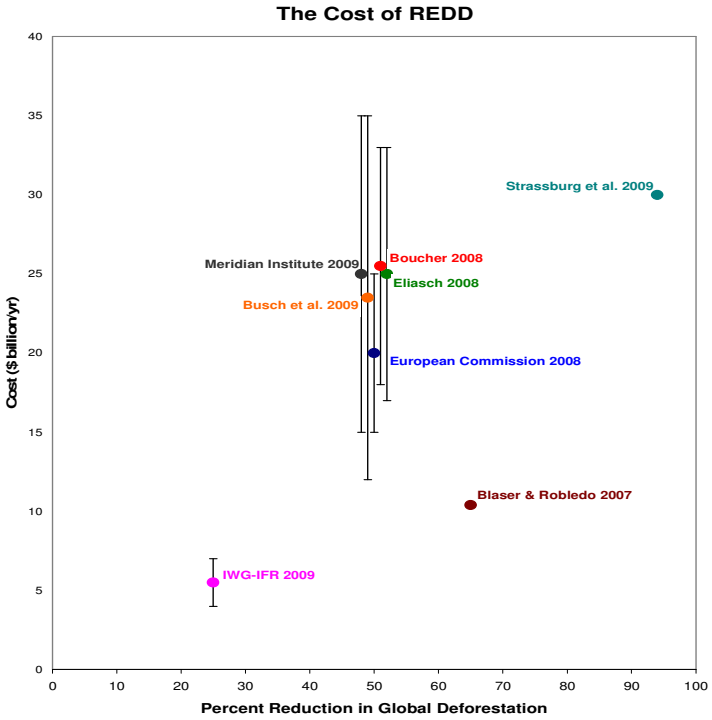

Figure 1: Range of estimated costs for reducing emissions from deforestation and forest degradation. Note: Most of the estimates are for reductions by the year 2020, but the Eliasch Review considers reductions by 2030, the IWG-IFR report considers reductions for 2010 to 2015, and the Busch et al. analysis is a historical simulation over 2000-2005. The Meridian Institute report reviews results from various studies for reductions by 2020 to 2030. References for this figure listed at the end of this document.

These estimates are for opportunity costs and do not include costs such as program budget and government implementation. Furthermore, in almost all of these studies the economic benefits associated with maintenance of ecosystem services has not been included. REDD+ actions offer multiple benefits, ranging from global (biodiversity), to regional (water provision), to local (cultural/aesthetic); such benefits vary in value and marketability, but can provide additional incentives for REDD+ implementation (Dickson and Osti, 2010).

Stabilizing GHG concentrations at safe levels requires ambitious efforts to reduce emissions quickly from tropical forests as well as other sectors. The most recent estimated costs of cutting deforestation in half range from $12 to $35 billion USD/year (see Figure 1). These estimates focus on 'opportunity costs' without considering capacity building and transaction costs, which will also be significant. However, because REDD+ is likely to be more cost-effective than other mitigation options currently available, the long-term estimated costs savings from REDD+ in most models provide significant scope for covering these additional expenses beyond opportunity costs. Also, most global analyses of the costs of REDD+ do not consider economic benefits of forest conservation that are conferred through erosion control, fire inhibition, biodiversity conservation, and protection of hydrological functions such as flood control (Stickler et al, 2009). Sufficient funding and resources should be applied consistent with the goal of halving deforestation before 2020, which will require financing on the higher end of the ranges above. Non-market sources alone are unlikely to achieve financing at this scale. For the period 2010-2012, developed countries committed $4.5 billion USD for REDD+. The gap between this figure and the estimated annual financing needs for REDD+ is significant.

Utilizing market financing for REDD+ will require strong caps in developed countries under the UNFCCC. In the absence of those caps, ambitious efforts need to be made to identify additional sources of financing, particularly innovative sources that will be predictable, sustainable and adequate.

Substantial private investment may be required to redirect the rural development pathways of dozens of developing nations away from deforestation-dependent economic activities and

towards forest-maintaining activities. In the absence of adequate funding, national and sub-national governments may be unable to reduce emissions from deforestation and forest degradation to the level of their crediting baselines.

Success in the US Acid Rain Program-Markets in Action

The US acid rain program is an example of how cap and trade programs and market mechanisms can work to achieve environmental goals while also controlling costs. This approach promotes aggressive solutions by making them more economically feasible.

In 1981, the US National Academy of Sciences issued a broad report supporting the view that atmospheric emissions of SO_2 and NOx result in acidic deposition (through rain, snow, and fog) that, in turn, caused environmental damage.[4] The Academy's report also urged a "prompt tightening of restrictions on atmospheric emissions from fossil fuels and other large sources."[5]

Cap and trade was designed, tested and proven in the United States in this context, as a program within the 1990 Clean Air Act Amendments to address acid rain. The success of this program led The Economist magazine to crown it as "probably the greatest green success story of the past decade."6 The following points highlight some real world results of that program:

- The program achieved an ambitious 50% reduction in sulfur dioxide emissions three years ahead of schedule at a fraction of projected costs.

- SO_2 emissions were reduced by 56 percent compared with 1980 levels and 52 percent compared with 1990 levels. Sources emitted 7.6 million tons of SO_2 in 2008, well below the current annual emission cap of 9.5 million tons, and already below the statutory annual cap of 8.95 million tons set for compliance in 2018.

- The expected market price for SO_2 allowances was in the range of $579-$1,935 per ton of SO_2; in 2008, the most recent period, allowance prices declined sharply during the year, from a monthly average of $509/ton in January to $179/ton in December.

- In the 1990s, the U.S. acid rain cap and trade program achieved 100% compliance in reducing sulfur dioxide emissions. In fact, power plants participating in the program reduced SO_2 emissions 22% - 7.3 million tons - below mandated levels.

- Prior to the launch of the program, cost estimates had ranged from $3-$25 billion per year. After the first 2 years of the program, the costs were around $0.8 billion per year. The long-term costs of the program are expected to be around $1.0-$1.4 billion per year, far below early projections.

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[4] Committee on the Atmosphere and the Biosphere, National Research Council, National Academy of Sciences, *Atmosphere-Biosphere Interactions: Toward a Better Understanding of the Ecological Consequences of Fossil Fuel Combustion* (Washington, DC: National Academy Press, 1981).

[5] Ibid.,7

[6] July 6, 2002.

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