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A Core Participation Requirement for Creation of a REDD market

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Current proposals for including Reduced Emissions from Deforestation and Degradation (REDD) in an international climate agreement go beyond the requirements of the Clean Development Mechanism (CDM) by advancing national- or subnational-level accounting, which addresses concerns about project-level leakage. One of the remaining challenges of including (REDD) in the international trading of greenhouse gas allowances is concern over international leakage. REDD market participation by non-Annex I countries would be voluntary. Voluntary participation can create problems if those countries that opt in take action to reduce their emissions, but deforestation, degradation and the associated emissions merely shift to countries that do not opt into the system. This is the essence of international leakage. Our research shows that international leakage potential can be quite high if only a small portion of the potential REDD sources are participating. Leakage diminishes as more countries opt in¹. Therefore it is important to include as many countries as possible in an agreement to ensure that the efforts of those who do participate are not undermined by those who don't. While this is clearly a problem not only for forests and REDD, it is one worth trying to solve if the objective is to ensure that REDD activities result in real emission reductions which is critical for REDD credits to be fully fungible within the global carbon market. Because the solution - greater participation - advances the overall goals of global policy, introducing incentives to accomplish this would be a positive feature. But it should be introduced in a way that it does not slow the development of REDD activity for early action and builds the needed experience to do REDD activities well.

We have been down the path of maximizing global participation before. In the negotiation of the Kyoto Protocol it was agreed that the Protocol would not go into effect unless ratified by countries contributing more than 55% of global GHG emissions (not including deforestation). The reasoning is transparent and parallel to the situation just described for REDD. The actions of those ratifying the Protocol would have been greatly undermined if a majority of the world's emitters did not sign on.

Using this as precedent, one could make the establishment of international tradable credits for REDD conditional on the adoption of binding REDD principles by some majority percentage of the world's REDD sources. As it did with Kyoto, this could create an international coalition of REDD supporters working through diplomatic channels to maximize participation. The incentives are strong because those who are in a position to gain from a REDD market (i.e., those with large numbers of low-cost REDD opportunities) will not be able to achieve those gains without wide enough participation by other countries. Of course, this would also create other political dynamics, such as the role that Russia played and the leverage they had in ultimately determining whether Kyoto's 55 percent threshold would be met, and the central focus that much of the world placed on U.S. engagement before it decided to withdraw from the Protocol's commitments.

We need not let compensation for REDD activities hang in the balance until final participation of countries is resolved. While it would be ideal for REDD tropical forest countries willing to participate in REDD to make their decision by COP 15 in Copenhagen in December 2009, it may not be realistic to think participation will be resolved, especially since the rules of the game are still being sorted out and presumably will be from now until then. While the use of fully fungible REDD credits tradable with capped country emissions allowance in a global carbon market could be conditioned upon the participation threshold alluded to above, it still remains possible to have either project-based compensation (with full accounting of leakage effects) or fund-based compensation not directly tied to the compliance-based global carbon market as a transitional strategy until the participation threshold issue is resolved. Given the additional value to parties of fully tradable and globally fungible credits, the incentives for achieving threshold participation should remain strong even if these initial steps are taken.

While a core participation requirement seems primarily of value for the UNFCCC conversation it might also have some value in the development of domestic U.S. policy. The international forest carbon provisions in the Lieberman-Warner America Climate Security Act (S.2191), now under debate in the U.S. Senate, are adaptable to the situation just described. The Act allocates funds from allowance revenues to implement and

¹ Murray, B.C. Forthcoming. "Leakage from an Avoided Deforestation Compensation Policy: Concepts, Empirical Evidence, and Corrective Policy Options," Ch. 9 in Palmer, C. and S. Engel (Eds), *Avoided Deforestation: Prospects for Mitigating Climate Change*, Routledge.





develop REDD activities but remains somewhat flexible on whether any credits generated by that activity could ultimately end up as credits usable in the U.S. compliance market. Therefore, the role of REDD credits in U.S. compliance markets could be made conditional upon the global participation threshold alluded to above. Conversely, the willingness of the U.S. to allow REDD in the offsets market could help expand the potential market for REDD countries and thereby increase the likelihood of threshold participation. If the U.S. allows REDD credits into the offsets market, but does so with a restriction on their use, which seems likely given the language in the main domestic proposal by Lieberman-Warner, The participation threshold could potentially act as a trigger for easing such restrictions in the U.S. as REDD becomes a fully fungible credit in the global carbon market.

Different measures could be used to gauge the scale of participation. The most straightforward approach is to use direct measures of carbon emissions from deforestation. See Table 1, Column 1 for a list of tropical forest countries rank-ordered by their deforestation emission rates. However, a better measure of participation may be the current level of forest carbon stocks, as these reflect the potential for further loss from deforestation, for example, from countries with historically low rates of deforestation, which nevertheless could become a leakage haven if other large tropical forest countries participate and they do not.

If the international community wishes to use majority participation as a criterion for the development of an international REDD market, further work will need to be done to decide which measures are most incentive-compatible for emissions reduction efforts and to improve the data from which these decisions will be made.

Table 1. Carbon Emissions and Carbon Stocks: Top 20 Countries

Forest carbon Emissions Per Year 2000-2005 (MtC) ^a				Carbon Stocks in 2000 (MtC) ^f			
Country	MtC/yr	Rank	% of Total Reported ^b	Country	MtC	Rank	% of Total Reported ^d
Brazil	519.1	1	24.81%	Brazil	82510	1	26.40%
Indonesia	485.7	2	23.21%	Congo Dem. Republic	36672	2	11.73%
Nigeria	123.2	3	5.89%	Indonesia	25397	3	8.12%
Congo Dem. Republic	86.6	4	4.14%	Peru	13241	4	4.24%
Burma (Myanmar)	65.7	5	3.14%	Angola	11767	5	3.76%
Zambia	63.5	6	3.03%	Colombia	11467	6	3.67%
Cameroon	60.4	7	2.89%	Bolivia	9189	7	2.94%
Philippines	49.6	8	2.37%	Venezuela	7886	8	2.52%
Venezuela	46.1	9	2.21%	Central African Repub.	7405	9	2.37%
Bolivia	41.3	10	1.97%	Papua New Guinea	7075	10	2.26%
Ghana	41.1	11	1.97%	Zambia	6378	11	2.04%
Tanzania	37.6	12	1.79%	Cameroon	6138	12	1.96%
Ecuador	34.6	13	1.65%	Mexico	5790	13	1.85%
Papua New Guinea	32.6	14	1.56%	Congo	5472	14	1.75%
Honduras	32.3	15	1.55%	Mozambique	5148	15	1.65%
Malaysia	31.3	16	1.50%	India	5085	16	1.63%
Paraguay	28.2	17	1.35%	Burma (Myanmar)	4867	17	1.56%
Uganda	26.3	18	1.26%	Malaysia	4821	18	1.54%
Angola	24.6	19	1.17%	Gabon	4742	19	1.52%
Cambodia	23.2	20	1.11%	Nigeria	3952	20	1.26%

^a Calculation based on (1) the country-level carbon stock values presented by Gibbs et al. (2007) in "Monitoring and estimating tropical forest carbon stocks: making REDD a reality", who calculated carbon stocks by applying the *IPCC Guidelines for National Greenhouse Gas Inventories* (2006) biome-average above ground and below ground (trunk, branches, roots) forest carbon values to a satellite-based global land cover map for 2000, (2) the country-level forest area values for 2000 from FAO's 2005 *Forest Resources Assessment*, and (3) the deforested area values for 2000-2005 from FAO's 2005 *Forest Resources Assessment*.

^b Given the data available, carbon loss was estimated for 61 tropical countries, only 50 of which were losing carbon, the others were either gaining forests or had no net loss.

^c Based on the country-level carbon stock values presented by Gibbs et al. (2007) in "Monitoring and estimating tropical forest carbon stocks: making REDD a reality", who calculated carbon stocks by applying the *IPCC Guidelines for National Greenhouse Gas Inventories* (2006) biome-average above ground forest carbon values to a satellite-based global land cover map for 2000.

^d Carbon stock data was reported for 61 tropical countries in Gibbs et al. (2007).

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