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before the

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on the topic of

"International Deforestation and Climate Change"

Thank you Mr. Chairman, Mr. Ranking Member and members of the Subcommittee, for the opportunity to testify this morning on the important topic of international deforestation and climate change. I am testifying today in my capacity as a Senior Fellow at the World Wildlife Fund ("WWF"). In addition to my work with WWF, I have had a longstanding personal and professional interest in forestry issues, having served as Deputy Secretary of the Interior in the Clinton Administration. Given the importance of this issue to the global environment, it is particularly fitting that the Subcommittee is holding this hearing on Earth Day.

Summary

WWF is encouraged by the promising first steps that the international community is taking to address global deforestation and degradation as part of the United Nations' framework convention on climate change, as evidenced in the recent Conference of the Parties in Bali, Indonesia, and in discussions leading towards Copenhagen, when a new treaty is expected to be completed. WWF also is encouraged that S. 2191, America's Climate Security Act, introduced by Senators Lieberman and Warner, which would establish a U.S.-based program to constrain

greenhouse gas emissions, also includes an international forestry title which recognizes that the U.S. must play an active role in "reduced emissions from deforestation and degradation" or "REDD," working in tandem with affected nations and the entire international community.

The attention on deforestation is both appropriate and necessary, given the fact that the on-going loss of forestry resources accounts for approximately 20% of all greenhouse gas emissions, world-wide. Simply put, we cannot make progress in battling climate change unless we reduce the alarming rate of deforestation that is occurring on an on-going basis in a number of developing nations.

Unlike conventional sources of greenhouse emissions, however, deforestation and forest degradation present multi-faceted challenges that are particularly difficult to tackle. Sustainable progress will only be made by addressing the complex root causes of deforestation and forest degradation. This will require the cooperation of the governments who are losing their forestry resources; the cooperation of the U.S. and other developed nations whose trade practices are influencing how forestry resources are being used (and/or abused); and, importantly, the active participation of indigenous people and others who are most impacted by land use choices made in their home lands.

WWF believes that international climate change discussions and U.S. legislation should focus, first, on promoting economic models that address the root causes of deforestation and degradation and which involve the coordinated effort of the international community. Economic initiatives that encourage trade in sustainable forestry resources and products, and which penalize forest degradation and the loss of valuable forest resources, for example, must be actively promoted. The development of international carbon markets that will recognize and reward the financial value of maintaining tropical forests and reducing rates of deforestation also should be the subject of active consideration. To lay the groundwork for developing such a market, a significant investment must be made in building local capacity to measure and monitor the carbon stocks in developing countries' forestry resources.

In this regard, WWF supports the Lieberman-Warner bill's establishment of an Emission Allowance Account "for use in carrying out forest carbon activities in countries other than the United States." Such an allocation would generate funding needed to help local citizens and institutions develop and proliferate the technologies and methodologies that will reliably measure and track the carbon content of forests and forest products, and to undertake the training needed to

generate and validate the data used for this purpose. As discussed further below, these are essential prerequisites of any effort to establish a credible and viable carbon market in those countries.

As a corollary, WWF also supports the Lieberman-Warner bill's general expression of interest in developing and promoting a carbon market that could generate financial support for protecting forests. WWF believes that the U.S. should proceed deliberately in this area, however, in close cooperation with the international community. A carbon market that effectively generates financial incentives to reduce tropical deforestation should not be presumed to operate in the same way as today's voluntary market for carbon offsets from forests, or the Kyoto Protocol's project-based Clean Development Mechanism. A different approach will be needed if credit is to be given to avoiding deforestation and to the on-going conservation of forestry resources.

A deliberate approach also is needed due to the significant concerns that have been raised about the environmental integrity of some offset projects that have been developed under existing frameworks. Similar concerns will apply to forest-based credits. Indeed, forestry credits are likely to generate special scrutiny, given the large number of credits that potentially could be generated from avoided deforestation projects and the special challenges of quantifying and verifying emissions reductions from improved forestry practices, particularly with regard to "leakage," "permanence" and "additionality," as discussed below. In addition, a carbon market that credits forestry-based "offsets" must not enable industrialized nations to avoid investments in their own emissions reductions.

Despite these challenges, WWF is optimistic that the U.S., working with the international community, can identify and implement a comprehensive program that tackles the root causes of deforestation. This effort can and must include the development of financial mechanisms that will sustainably protect forestry resources and complement commitments by developed countries to reduce their greenhouse gas emissions.

WWF and Forest Conservation

For more than 45 years, WWF has been protecting the future of nature. Today WWF is the largest multinational conservation organization in the world. WWF's unique way of working combines global reach with a foundation in science, involves action at every level from local to global, and ensures the delivery of innovative solutions that meet the needs of both people and nature. WWF currently

sponsors conservation programs in more than 100 countries, thanks to the support of 1.2 million members in the Unites States and more than 5 million members worldwide.

WWF is actively engaged in the protection and sound management of forestry resources around the world. By way of example, WWF is involved in: (1) the Congo Basin Forest Partnership (CBFN), a Presidential Initiative with 34 partners worldwide, which seeks to reform forestry practices, promote economic development, and improve governance, by supporting a network of national parks, protected areas, and well-managed forestry concessions; implementing sustainable, community-based natural resource management; promoting ecotourism; helping to enforce anti-poaching and forestry laws; and working with the regional Forestry Commission; (2) the Heart of Borneo Initiative, which seeks to protect the highland forests on the island of Borneo, shared by Indonesia, Malaysia and Brunei Darussalam, by improving trans-boundary cooperation, expanding the protected area network, emphasizing responsible resource use across multiple extractive industries, such as pulp and paper and palm oil production, and developing long-term sustainable and equitable financing mechanisms; and (3) the Amazon Initiative, which includes work through the Amazon Region Protected Areas Program (ARPA), and the Amazon Headwaters Program, as well as efforts to engage major corporations in Europe and the US to build commitments to purchase of sustainably managed wood from this region.

Transcending our work in specific regions such as the Congo Basin, Borneo or the Amazon, WWF also works directly with global forestry markets. WWF is a partner in the Global Forest and Trade Network (GFTN), supported by the Sustainable Forest Products Global Alliance (Global Alliance) -- a US AID-funded public/private partnership that catalyzes businesses, public agencies, and non-governmental organizations to promote responsible management of forest resources, reduce illegal logging and improve the well-being of local communities. The GFTN seeks to provide committed companies with tools and technical assistance to achieve responsible forestry through their management and purchasing practices. It has established regional Forest Trade Networks in key producer and consumer countries and regions covering over 30 countries, with a total of 361 separate legal entities around the world. GFTN Participants and Applicants produce or trade in an estimated volume of 222 million cubic meters of round wood equivalent, representing 12.3% of the global total traded, estimated at 1.799 billion cubic meters in 2005 by FAO. In terms of value, GFTN Participants and Applicants produce or trade in an estimated $49 billion or approximately 13.6% of the global total ($360 billion estimated by WRI). In addition, GFTN

Participants and Applicants employ over 150,000 people, or approximately 1.2% of the global total based on the FAO estimate (in 2000) of 12.9 million forest workers globally.

Through its work, WWF has come to understand the complex factors that play a key role in maintaining healthy forests. WWF works on different aspects of forestry management -- governance, trade, logging, conversion, finance, supply chain, etc -- giving us a unique holistic view of how to address forestry management in the context of carbon management.

Tropical Deforestation and Its Impact on the Global Carbon Cycle

Forests play a key role in the global carbon cycle, and they must play a central role in efforts to slow and eventually halt human contributions to climate change. Forty to sixty percent of the world's land-based carbon is stored in forest reservoirs, and these natural resources provide a critically-important line of defense against carbon emissions. Just when we need the world's forests the most – to remove as much carbon dioxide from the atmosphere as they possibly can – our forests are disappearing. Over the last 8000 years, the world has lost about half of its forest cover:[1] the current rate of forest destruction is estimated to be 32 million acres each year.[2] In the next 24 hours, deforestation at rates of about 100 acres a minute will release as much CO2 into the atmosphere as would eight million people flying from London to New York.[3] In recent years, forestry-sourced emissions have accounted for about 20% of total global emissions.[4] The Intergovernmental Panel on Climate Change (IPCC) estimates that land use change emissions, mostly from tropical deforestation, released between 800 million and 2.4 billion metric tons of carbon per year during the 1990s, and currently releases an estimated 1700 million tons per year.[5] In the past, these emissions represented anywhere from 10%-25% of all global human-induced emissions.[6]

When we lose our forests, the global environment takes a double hit. First, the carbon that was being stored in forests is vented to the atmosphere, adding to the man-induced increases in carbon emissions that are causing climate change. This makes emissions from deforestation and other land use changes comparable to global emissions from petroleum, coal, or natural gas,[7] and almost equal to all U.S. emissions.[8] Emissions from deforestation in Brazil and Indonesia alone are equal to the entire reduction commitments of the Annex 1 countries of Kyoto Protocol during the Protocol's first commitment period.[9]

Second, in addition to directly burdening the atmosphere with large volumes of new carbon emissions, deforestation impairs or destroys many of the goods and services that forests provide to both the environment and to people. The Natural Capital Project, a joint project sponsored by WWF, the Nature Conservancy and Stanford University's Woods Institute for the Environment, has identified and is quantifying many of these services, including protection of water supplies, the generation of a wide variety of forest-related products, and the promotion of recreation and tourism and cultural and aesthetic values.[10]

Reduced Emissions from Deforestation and Degradation Should and Will Be Addressed as Part of the International Framework Convention on Climate Change

Although forests play a central role in the carbon cycle, forestry issues have played a limited role to date under the Kyoto Protocol. There are sound, historical reasons why forestry is not a primary focus of the existing Protocol. Specifically, in the lead-up to the Kyoto agreement, a number of countries, including the United States, were arguing that the absorptive capacity of their carbon "sinks" should reduce their obligations to mitigate emissions from other sources. WWF objected to countries relying on existing forestry resources as a means of avoiding having to reduce emissions from industrial sources, and WWF played a significant role in limiting the role of forestry and land use in establishing baselines under the Kyoto Protocol and in meeting carbon emissions reductions required under the Protocol.

But the times and circumstances have changed and, WWF strongly believes that forestry issues – particularly tropical deforestation and degradation – must now be incorporated into the international framework on climate change. The debate on forestry has moved from a discussion revolving around the tactical use of forests to define emissions reductions obligations to a recognition that deforestation is a major source of carbon emissions that must be reduced in the first instance. The science on this issue also has advanced significantly in the years since Kyoto. Remote sensing technology and other scientific tools enable us to better understand and calibrate the impact of the deforestation and degradation that is occurring around the world. Finally, unlike the Kyoto negotiations, developing countries are now engaged in this issue and are asking that forestry resources be incorporated into the international climate framework. As you know, the Coalition for Rainforest Nations and other developing world nations have advanced serious proposals which prompted the international community, in the recent Bali discussions, to launch a new initiative to integrate forestry issues into the international framework convention on climate change.

Special Challenges Associated with Effectively Reducing the Rate of Tropical Deforestation and Degradation

Although a consensus is emerging that tropical deforestation issues must be addressed as a part of the international framework convention on climate change, there are special challenges in designing an initiative that will avoid tropical deforestation and in folding such a plan into an international agreement and/or into domestic legislation.

First, the causes of deforestation and the degradation of forests in developing countries are complex, and are not easily addressed through financial transfers or short-term conservation efforts. The problems of deforestation and forest degradation can only be effectively addressed by acknowledging and systematically confronting their underlying causes. The economic pressures to clear forests in some developing countries are enormous. The short-term gains from over-harvesting can be irresistible, particularly when the economic advantages of conducting sustainable forestry practices and the marketing of forestry products may not be appreciated or, in some cases, may not be feasible. Indigenous and forest-dependent people have an enormous stake in these issues, and strategies to protect forests cannot go forward without the full participation of the people who live and work in forested areas. Indeed, the only forest protection strategy that is likely to have long-term success is a strategy that acknowledges the economic drivers at work and which promotes the introduction of sustainable forestry practices on a global basis – work that WWF has been pioneering for many years.[11]

Second, while the science has improved, there remain serious technical and methodological issues associated with monitoring and measuring emissions from forestry resources. Measuring carbon stocks in forestry resources is a complex undertaking. It is not amenable to the same type of precision that can be achieved when documenting emissions from point sources.[12] Also, forests raise special challenges regarding the "permanence" of carbon sequestration, given the dynamic nature of forests, including different rates of tree growth and death, periodic fires, etc. "Leakage" also is a special concern that poses perhaps the most significant challenge in the forestry sector. If deforestation is avoided in one area due, for example, to a project-based investment in maintaining a particular forest, there may be a risk that deforestation will simply occur in another, unprotected area. Finally, the concept of *avoided* deforestation – which is based on the need to protect existing forestry resources -- does not comport with the usual test for

demonstrating progress in reducing emissions – the "additionality" test which customarily measures "additional" reductions that would not otherwise have occurred against a preexisting baseline.[13]

WWF does not believe that any of these technical and methodological issues are insurmountable. National baselines for deforestation rates, for example, provide a promising means to address leakage and permanence. Nonetheless, all of these issues present difficult challenges in the forestry context; they must not be brushed aside. It will take a large, well-organized, and concerted effort on these technical issues to earn the credibility that must underpin major investments in protecting the world's forests.

Third, as a related point, there is limited institutional capacity in many developing countries to apply the type of new technologies and methodologies that are needed to track and calibrate progress in limiting deforestation and degradation. There is an enormous gap between what is theoretically possible and on-the-ground capabilities in many of the concerned nations, which are grappling with severe economic and social challenges on many fronts.

The combination of these special challenges means that the traditional approach for reducing greenhouse gas emissions is not easily and readily applied in the tropical deforestation context. When seeking to reduce emissions from other types of sources, financial capital is typically invested in specific projects that generate measurable and verifiable reductions in greenhouse gas emissions that otherwise would not have occurred. These demonstrated reductions are then traded on the carbon markets that have emerged under the Kyoto scheme, and through the voluntary marketplace.

As explained above, concerns about measurement error, leakage, additionality and permanence on a project-by-project basis can be acute in the forestry context. Moreover, the typical notion of rewarding efforts to reduce emissions that would otherwise occur does not fit with the compelling need *to maintain the status quo* in terms of protecting tropical forests that are threatened by conversion to agriculture or other land uses. We must find ways for tropical forested countries that have current low rates of deforestation and forests that engage in sustainable forest management practices to participate in future carbon markets. In addition to these forestry-specific challenges, the broader questions about the environmental integrity of "offset" schemes, and their relationship with other emissions reductions commitments, must be squarely confronted and addressed.[14]

For all of these reasons, WWF believes that it is not appropriate to simply assume that the model of investing in carbon reduction projects, as implemented through the Clean Development Mechanism under the Kyoto Protocol and other "offset" models, can or should be applied in the international forestry context. WWF will be an active participant in the international discussions following Bali, in which alternative approaches will be discussed for how best to bring forestry, and the deforestation and degradation issue in particular, into the international climate framework. Concurrently, WWF will be developing a portfolio of pilot projects within tropical forested countries with current high rates of deforestation that will address capacity building and the technical and methodological needs that have been discussed in this testimony.

Recommendations

Multilateral Negotiations

Although the discussions on this subject remain in their early stages in the international arena, a few observations that may be helpful to this Committee's consideration of this issue are in order – particularly with regard to U.S. engagement on the tropical deforestation problem.

First, the United States must be actively involved in post-Bali efforts to address the tropical deforestation issue. Good ideas are being put on the table. The Tropical Rainforest Coalition, for example, has asked for the assistance of developed nations to "support [forest protection efforts] through capacity building, research and development, [and the] transfer of appropriate environmentally sound technologies." The Coalition also has expressed an openness to consider a variety of alternative financing mechanisms to address the deforestation issue.

A number of proposals are being floated, including the Environmental Defense Fund's notion of "compensated reduction" under which tropical countries would receive emissions allowances tradable in the global carbon market based on a showing of "real reductions" that have been proven to have taken place. EDF's proposed focus is on "a nation's entire forest system, not just individual projects, thereby avoiding problems that have hindered consensus on forest issues."

Also, some NGOs have suggested that the UN adopt a "dual markets approach" under which a separate carbon market would be created in which developed countries could invest in reducing deforestation in developing countries in order to achieve a portion of their national Annex I post-2012 carbon reduction targets.

Creating a dual market would address the concern that avoided deforestation credits could be given out too generously and without adequate safeguards, thereby potentially disrupting the more carefully constrained carbon market.[15]

Other proposals focus on the creation of a global avoided deforestation fund or funds, financed by governments and/or the private market, which would be applied toward avoided deforestation and sustainable forestry initiatives, including capacity building and the development of a technical information needed to assess progress.

The United States should be an active participant in the international discussions addressing all of these approaches.

U.S. Legislative Proposals addressing Forestry and Climate

Capacity Building; Technical and Methodological Support

As noted above, WWF supports the Lieberman-Warner bill's establishment of an Emission Allowance Account "for use in carrying out forest carbon activities in countries other than the United States." This allocation can generate some of the funding that is needed to address the technical and methodological gaps, and the institutional limitations, discussed above. Such funding should be coordinated with the work of other governments and NGOs who are actively engaged in addressing these issues.

In addition to the proposed Lieberman-Warner funding mechanism, WWF urges this Subcommittee to consider providing foreign assistance funding from other programs that are under its jurisdiction (including USAID program assistance, for example) to address urgent needs presented by global deforestation. Many agencies of the United States government are involved in trade and development issues that directly or indirectly affect tropical deforestation. WWF urges the Subcommittee to request the Administration to identify and coordinate these activities, so that the U.S. can maximize its efforts to reduce the massive greenhouse gas emissions that are being caused by deforestation.

Application of Carbon Markets and Other Financial Incentives to Forestry Resources

As discussed above, WWF also believes that there is an important role for the carbon market to play in addressing this issue. For the reasons discussed above,

however, it is important not to prejudge the nature and scope of that involvement. Neither the U.S. nor any other developed nation should presume what type of approach will be acceptable and/or desirable from the perspective of the developing nations that are facing the on-going challenge of deforestation and forest degradation.

In that regard, the Lieberman-Warner international forestry title's indication that EPA should "recognize credits from forest carbon activities," while also encouraging EPA "to identify other incentives, including economic and market-based incentives, to encourage developing countries with largely-intact native forests to protect those forests" leans in an appropriate direction. The legislation, however, would benefit from more explicit instructions to EPA to develop options for crediting forest protection activities in coordination with post-Bali discussions that are occurring on an international level. EPA should be directed to work with interested parties, including scientists, industry representatives, NGOs, and others, to identify and/or develop workable technical and methodological approaches for measuring carbon stocks in various types of forests, and in defining and accounting for carbon impacts associated with engaging in sustainable forestry practices in tropical forests. Guidance also should be developed for addressing the permanence, leakage additionality issues discussed above.

Other Policy Initiatives to Address International Deforestation and Climate Change

While much of the discussion on forestry and climate change currently taking place among policymakers centers on a post-Kyoto multilateral framework and specific U.S. cap-and-trade legislation such as S. 2191, it is important to recognize the multitude of other efforts taking place to address forestry conservation, and their role in addressing climate change.

Legislatively, for example, Congress can and should reauthorize the Tropical Forest Conservation Act, which provides for debt-for-nature swaps for certain countries and eligible debt, and which is under the jurisdiction of the Foreign Relations Committee. This program can play an important role in forest conservation as it relates to climate change through the development of a debt-for-carbon program for forestry conservation. Congress also is considering amendments to the Lacey Act to prohibit imports into the U.S. of timber products comprised of illegal timber. Prohibitions like this, which address the demand side, provide an implement complement to conservation efforts that focus on supply side. Likewise, a number of Free Trade Agreements with developing countries

rich with tropical forests – including Peru, Columbia and Malaysia -- may soon come before the Senate. How forestry conservation and technology are handled in those FTAs may have a strong bearing on forestry conservation in the context of climate change.

The U.S. also can take additional steps administratively to promote forestry conservation practices. The U.S. recently entered into a bilateral agreement with Indonesia on forestry conservation, and is currently negotiating a Memorandum of Understanding with China, through the Strategic Economic Dialogue, on timber trade. These agreements can create important opportunities for collaboration to address deforestation and forest degradation. USAID also can and should explore its financial assistance framework and funding priorities in the context of climate change. Much of its biodiversity work ($195 million in FY2009) focuses on forestry conservation. These activities should be evaluated with an eye toward mitigating greenhouse gas emissions, and adapting to a changing climate.[16]
In sum, WWF encourages this Subcommittee to utilize its full jurisdiction in exploring ways to address deforestation and climate change.

Conclusion

WWF thanks the Subcommittee for holding a hearing on the critically-important topic of reducing emissions from deforestation and degradation, and for inviting WWF to testify on the subject. WWF looks forward to continuing to work with the Subcommittee, and with the full Committee on Foreign Relations, on this vitally set of important issues.

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[1] Submission by the Governments of Papua New Guinea & Costa Rica, Reducing Emissions From Deforestation in Developing Countries: Approaches to Stimulate Action, COP 11; available at http://www.rainforestcoalition.org/documents/COP-11AgendaItem6-Misc.Doc.FINAL.pdf.
[2] Bryan Walsh, Getting Credit for Saving Trees, Time Magazine; available at: http://www.time.com/time/magazine/article/0,9171,1642887,00.html.
[3] Cool Earth Action, http://www.coolearth.org.
[4] Blue Climate, Expand Kyoto Clean Development Mechanism to Include Deforestation?; available at:http://www.blueclimate.com/blueclimate/2006/11/expand_kyoto_cl.html.
[5] Center for International Forestry Research, Reducing Emissions from Deforestation; available at: http://www.cifor.cgiar.org/carbofor/highlights/reduce-emission.htm.
[6] Submission by the Governments of Papua New Guinea & Costa Rica, Reducing Emissions From Deforestation in Developing Countries: Approaches to Stimulate Action, COP 11; available at http://www.rainforestcoalition.org/documents/COP-11AgendaItem6-Misc.Doc.FINAL.pdf; IPCC Special Report on Land Use, Land Use Change and Forestry; available at: http://www.grida.no/climate/ipcc/land_use/index.htm.

[7] Submission by the Governments of Papua New Guinea & Costa Rica, Reducing Emissions From Deforestation in Developing Countries: Approaches to Stimulate Action, COP 11; available at http://www.rainforestcoalition.org/documents/COP-11AgendaItem6-Misc.Doc.FINAL.pdf; IPCC Special Report on Land Use, Land Use Change and Forestry; available at: http://www.grida.no/climate/ipcc/land_use/index.htm.

[8] Katherine Ellison, Shopping for Carbon Credits, Salon.com; available at: http://www.salon.com/news/feature/2007/07/02/carbon_credits/index_np.html.

[9] Center for International Forestry Research, Reducing Emissions from Deforestation; available at: http://www.cifor.cgiar.org/carbofor/highlights/reduce-emission.htm.

[10] See, e.g., http://naturalcapitalproject.org/toolbox.html#Life

[11] See generally, the Center for International Forestry Research website, http://www.cifor.cgiar.org/Research/ENV/Themes/SUF.

[12] See, e.g., Zach Willey and Bill Chameides (ed.), Harnessing Farms and Forests in the Low-Carbon Economy: How to Create, Measure, and Verify Greenhouse Gas Offsets (Duke University Press 2007).

[13] See generally, Mark Trexler, Derik Broekhoff and Laura Kosloff, "A Statistically-Driven Approach to Offset-Based GHG Additionality Determinations: What Can We Learn?" Sustainable Development Law and Policy (Winter 2006).

[14] See generally, David J. Hayes, Getting Credit for Going Green: Making Sense of Carbon "Offsets" In a Carbon Constrained World, Center for American Progress (March 2008). See also WWF analysis of the operation of the CDM mechanism, http://assets.panda.org/downloads/cdm_report_wwf_background_paper.pdf

[15] See, e.g., Center for Clean Air Policy, "Reducing Emissions from Deforestation and Degradation: the Dual Markets Approach (August 2007), http://www.ccap.org/international/FINAL%20REDD%20report.pdf. See also, Greenpeace, "Tropical Deforestation Emission Reduction Mechanism: A Discussion Paper" (December 2007), http://www.greenpeace.org.uk/files/pdfs/forests/tderm-funding-mechanism.pdf

[16] In August 2007, USAID published "Adapting to Climate Variability and Change: A Guidance Manual for Development Planning," which also can be used in considering how best to fund forestry conservation projects for climate change.