

The Costs of Reducing Carbon Emissions from Deforestation and Forest Degradation

Tuesday, May 27, 2008

9:00 am - 5:30 pm

The World Bank, 1818 H St, NW, Washington, DC 20433

Room MC 13-121

Objective

Deforestation is responsible for about 20% of worldwide greenhouse gas emissions. The recent Conference of the Parties to the UNFCCC decided to investigate the ways of including incentives for reducing emissions from deforestation and forest degradation (REDD) in a post-2012 climate change regime.

The World Bank Latin America and Caribbean Region's Sustainable Development Department is sponsoring a series of learning events for Bank staff on the economics of deforestation and forest degradation, in particular the estimation of opportunity and implementation costs of REDD and the design of positive incentives for REDD.

This is the third event. It is designed to advance the understanding of the economics of REDD by bringing together leading economists and scientists who have researched the topic and allowing them to present and discuss their methods and findings. The focus will be on estimating the costs of REDD. Ideally, the event would shed light on the differences and similarities of the various models and methods so that Bank staff and policy makers can apply the lessons in their work.

The Bank is involved in several major initiatives specifically targeting the interface between forests and climate, including the Forest Carbon Partnership Facility (FCPF), which is created to build capacity and experience in REDD, and the low-carbon country case studies in Brazil and Mexico, which are designed to identify long-term climate change mitigation measures, including in the forest sector.

The countries interested in participating in the FCPF as either donors/buyers or recipients/sellers have expressed a strong interest in understanding better the existing economic research.

It is expected that the May 27 event will be complemented by additional deliberations and the production of a synthesis paper, which would synthesize the answers to the questions above.

Format

The speakers will be asked to limit their presentation to 15 minutes and to allow 15 minutes for questions and answers. The speakers are requested to organize their presentations so they address the following questions:

1. How do you estimate the costs of REDD?
 - a. What data did you use?
 - b. Which assumptions did you make?
 - c. Are your methods easily applicable in other countries or regions than the one you studied?
 - d. What do you see as the strengths and weaknesses of your approach?
2. Which component(s) of the cost of REDD does your method estimate?
 - a. Opportunity costs
 - b. Implementation costs
 - c. Transaction costs
3. What is the supply curve of REDD in the country(ies) or region(s) you studied?
4. How reliable are your results, given data limitations, assumptions you had to make, and the underlying variability?
5. Do you believe your method could/should be recommended for use by countries interested in participating in the FCPF?

Draft Agenda

Time	Session
08:30	Breakfast
09:00	Welcome, Laura Tuck, World Bank
09:15	Agenda for the day, Benoit Bosquet, World Bank
09:30	Overview of Approaches to Estimating the Costs of REDD Douglas Boucher, Union of Concerned Scientists
	Local Models - Moderator Stefano Pagiola, World Bank
10:00	Local 1: Opportunities for Avoided Deforestation with Sustainable Benefits Brent Swallow, World Agroforestry Center
10:30	Local 2: The Costs and Benefits of Reducing Carbon Emissions from Deforestation and Forest Degradation in the Brazilian Amazon Frank Merry and Dan Nepstad, Woods Hole Research Center
11:00	Break
11:30	Local 3: Payments for Environmental Services: Empirical analysis for Costa Rica Alex Pfaff, Duke University
12:00	Local 4: An Empirically-Derived Mechanism of Combined Incentives to Reduce Emissions from Deforestation Bernardo Strassburg, University of East Anglia
12:30	Discussion
13:00	Lunch
	Global Models - Moderator Marco Albani, McKinsey
14:00	Global 1: Reducing Deforestation and Trading Emissions: Economic Implications for the post-Kyoto Carbon Market Jayant Sathaye, Lawrence Berkeley National Laboratory
14:20	Global 2: Economics of Avoiding Deforestation Michael Obersteiner, International Institute for Applied Systems Analysis
14:40	Global 3: Avoided Deforestation as a Greenhouse Gas Mitigation Tool - Economic Issues for Consideration Brent Sohngen, Ohio State University
15:00	Comparison of Global Models 1, 2 and 3 Jayant Sathaye, Michael Obersteiner and Brent Sohngen
15:20	Discussion
16:00	Break
16:30	General Discussion and Conclusions Stefano Pagiola and Benoit Bosquet, World Bank
17:30	End

Speakers' and Moderators' Biographies

Marco Albani

Dr. Marco Albani is a consultant McKinsey & Company's Toronto office. He is a Fellow of McKinsey's Climate Change Special Initiative and a core member of its Forestry Interest Group. Before joining McKinsey, he was a research scientist and postdoctoral fellow at Harvard University and Harvard Forest, specializing in carbon sequestration in forest ecosystems, as well as a research associate in the forest policy group at the European Forest Institute. Marco has an undergraduate degree in Forestry from the University of Florence in Italy and a Ph.D. in Forest Sciences from the University of British Columbia.

Douglas Boucher

Dr. Douglas Boucher is Director of the Tropical Forest and Climate Initiative at the Union of Concerned Scientists. Dr. Boucher has held various academic positions at McGill University, the University of Québec and Hood College. He was also the Washington Office Director of U.S. Representative Bernard Sanders (VT, At Large). He earned a Ph.D. in Ecology and Evolutionary Biology from the University of Michigan and has published about 75 scientific peer-reviewed articles and books.

Frank Merry

Dr. Frank Merry is currently Associate Scientist at the Woods Hole Research Center, Researcher at the Instituto de Pesquisa Ambiental da Amazônia (IPAM) in Santarém, Brazil, and Adjunct research Scientist at Virginia Tech Department of Forestry. He has published numerous articles on land and forest economics, including topics ranging from forest policy and timber trade to the economics of smallholders and cattle ranching. He is a citizen of Trinidad and Tobago, and has worked in both the Amazon and Africa. Merry is the lead economist of the Amazon Scenarios program where he is responsible for the design of large scale spatially explicit rent models in the Amazon. His research involves forest policy, international timber trade, the cattle and forestry sectors, economic analysis of households, and forest industry change in the Amazon.

Dan Nepstad

Dr. Dan Nepstad, a tropical forest ecologist has just joined the Gordon and Betty Moore Foundation from Woods Hole Research Center, where he was a Senior Scientist. In addition, he is both Scientist and Founding President of IPAM, Belém, Brazil. He is also Co-Founder of Aliança da Terra (Land Alliance), and Visiting Professor, Universidade Federal de Rio de Janeiro. Nepstad is a past recipient of the Pew Scholar Award in Conservation and Environment. Nepstad holds a Ph.D. in Forest Ecology from Yale University, an M.S. in Plant Ecology/Botany from Michigan State University, and a B.A. in Biology from Kalamazoo College. His scientific and conservation interests include tropical forests, climate change, forest fire, globalization, natural resource policy, and the "taming" of agro-industry. He has published over 100 scientific articles and books.

Michael Obersteiner

Dr. Michael Obersteiner is working in IIASA's Forestry Program where he is the principal investigator and scientific coordinator of a number of international research projects in the land use domain. He has worked at IIASA since 2002 where he has been dealing with structural change of the global forest sector, integrated scenarios of the land use sector, terrestrial carbon management and stochastic energy systems modeling. He received his Ph.D. from the Institute of Forestry, at the University of Agriculture and Forestry in Vienna, Austria. He also holds a Ph.D. from the joint program in economics, from Columbia University and the Institute for Advanced Studies in Vienna. He has worked as a visiting scientist at the Institute for Economics and Industrial Organization, the Siberian Branch of the Russian Academy of Sciences in Novosibirsk, Russia. Prior to that, he was a Fulbright Research Assistant at the College of Forest Resources at the University of Washington in Seattle. Dr. Obersteiner is also a Research Economist with the Department of Economics and Finance at the Institute for Advanced Studies in Vienna, Austria. He has been a consultant to the European Commission, the OECD, and several national governments. He has authored over 100 scientific papers and consultancy reports.

Stefano Pagiola

Dr. Stefano Pagiola is a Senior Environmental Economist in the World Bank's Environment Department. He leads the Bank's work on Payments for Environmental Services (PES). He has published extensively on PES and market-based instruments for conservation more generally. He holds a B.A. from Princeton University and an M.A. and Ph.D. from Stanford University. Before joining the World Bank in 1994, he taught environmental economics at Stanford University.

Alex Pfaff

Dr. Alex Pfaff, Associate Professor of Public Policy, Economics and Environment at Duke University, studies how economic development and the environment and natural resources affect each other. He studies: impacts of roads, parks and payments on deforestation (Brazilian Amazon, Costa Rica, Mexico); decisions that lower one's exposure to stoves' indoor emissions (Pakistan, Tanzania, Ghana) and to arsenic in drinking water (Bangladesh); responses to climate and water vulnerability (N.E. Brazil) by households and by participatory water allocation committees; and the incentives for firms to provide environmental information to regulators. The goal of this applied research is to raise the chance that interventions have their intended impacts upon the environment and natural resources while also benefiting the people that they are designed to help.

Jayant Sathaye

Dr. Sathaye's research interest in land-use change is focused on evaluation of mitigation options in light of climate impacts in India, development of global models for the evaluation of costs and potentials of forestry mitigation options, quantification of transaction costs of forestry projects, and development of project-based

methodologies. He has published more than 150 articles, books and book chapters, and reports in major energy and environment journals. He has been an author of nine publications of the Intergovernmental Panel on Climate Change (IPCC) since 1990, and was a co-Coordinating Lead Author for the Sustainable Development and Mitigation chapter of Working Group III of the IPCC Fourth Assessment. IPCC was awarded the 2007 Nobel Peace Prize. He has consulted with the World Bank, Asian Development Bank, United Nations Development Program, Global Environmental Facility, and other major international organizations. He holds a B.Tech. (Hons.) degree from the Indian Institute of Technology, Bombay and a M.S. and Ph.D. from the University of California, Irvine. He is currently a Senior Scientist, and Leader, International Energy Studies Group at LBNL.

Brent Sohngen

Dr. Brent Sohngen is a professor of environmental and natural resource economics in the Department of Agricultural, Environmental, and Development Economics at the Ohio State University. His primary research interests lie in modeling land-use change, assessing the economic efficiency of alternative policy instruments for non-point source water pollution control, and estimating the economic benefits of improving environmental resources. Sohngen has utilized market models to examine the implications of ecological change for timber markets, and to assess the costs of carbon sequestration in forests and agricultural soils. He leads an extension program in environmental and resource economics that provides resources on benefit cost analysis to Ohio policy-makers. Sohngen teaches a graduate and undergraduate course in micro-economic theory, and environmental and resource economics.

Bernardo Strassburg

Bernardo Strassburg is currently a doctoral researcher in the School of Environmental Sciences at the University of East Anglia and a member of the Centre for Social and Economic Research on the Global Environment (CSERGE). His research has been exploring the economic incentives related to tropical deforestation and its insights for the RED discussion. A native of Rio de Janeiro, Bernardo holds a degree in Economics and a M.Sc. in Environmental Planning and has worked as an environmental analyst for the Brazilian Ministry of Environment (Eastern Amazon) and as a consultant for the World Bank. He is currently leading two research projects on the "Economics of Climate Change in Brazil" study coordinated by the World Bank and the British government.

Brent Swallow

Dr. Brent Swallow is a Principal Economist at the World Agroforestry Centre (ICRAF) in Nairobi, and Global Coordinator of the Alternatives to Slash and Burn (ASB) Partnership for the Tropical Forest Margins. Brent leads ICRAF's work on payments and rewards for environmental services, which is implemented through networks of field sites and partnerships stretching across Asia and Africa. Since becoming Global Coordinator in early 2007, Brent has led the ASB Partnership to focus attention on the avoided deforestation debate within the UNFCCC, particularly the potential for Reduced Emissions Deforestation and forest Degradation to be attained with sustainable

benefits for forest margin communities. He is the lead author of a major cross-site study of the opportunity costs of avoided deforestation that the ASB Partnership released at the UNFCCC COP in Bali in December 2007. Brent is a national of Canada and holds a Ph.D. in Agricultural Economics from the University of Wisconsin-Madison.