

At the Intersection of Climate and Deforestation: Can We Solve Two Problems at Once?

New scientific evidence is emerging, on an almost daily basis, about the destructive effects of global warming on ecosystems around the world. While tropical deforestation has been a longstanding environmental concern, it is becoming increasingly clear that the effects of heavy logging, development pressures, and agriculture go well beyond habitat loss, for forests "sequester" carbon, removing it from the atmosphere. (See the box for detailed explanation.)

The nexus of these two crises was the subject of a recent seminar at RFF, which drew together representatives from the conservation community, federal agencies, and rainforest nations. For developing countries, building their economies in order to bring about higher living standards has often come at the expense of protecting the environment.

Finding positive incentives to slow the rate of deforestation around the globe emerged as a shared concern among the panelists. As

countries develop, they almost all deforest, and as they gain wealth, they tend to stabilize their forest cover and see that forests have value, said Kevin M. Conrad, special envoy and ambassador for environment and climate change, Papua New Guinea. The primary challenge now is helping countries bypass the deforestation phase, he said.

Bringing about real change will require focusing on the economics of the situation, according to Larry Linden, RFF's board chair and an advisory director and former general partner at Goldman Sachs. When the only way to make money requires cutting down trees, he said, "It's time to align private incentives with social costs and benefits, to find a way to add market value to standing trees."

The first place this is starting to happen is in the voluntary market for carbon credits, Linden said, but there are fundamental problems. The market is "disorganized" at best, with no standards for what you're buying, much less for what you're getting. "This approach will never grow and prosper without sufficient incentives that introduce compliance measures and encourage legal and economic rigor," he said. "There is a clear need for policy measures to make this happen."

Regulatory Impediments

Protecting carbon sequestration in tropical forests could be a crucial bridge to a low-carbon future, but until developing countries are able to be fully "compensated" for their reduc-

tions, progress will be halting, said Annie Peterson, international counsel, Environmental Defense. Again, the issue is a matter of accountability, she said. Under Kyoto, industrialized nations can measure their progress in curbing CO₂ emissions at the national level, while developing countries must tally theirs on a project-by-project basis. And getting an accurate estimate can be challenging: it's hard to measure emissions, determine a realistic baseline, and fairly calculate real results.

Rainforest nations like Papua New Guinea are told that this problem is too hard and can't be fixed, said Conrad. "But we can't afford to move on—we live with this conundrum every day. When deforestation occurs, topsoil flows into our rivers, people get sick, show up in our hospitals, and we can't afford to treat them."

Looking to the future, Ray Kopp, an RFF senior fellow and director of the Climate Technology and Policy Program, outlined the core questions that would have to be addressed about a new policy approach that incorporated credits from reducing emissions, deforestation, and ecosystem destruction.

- At the in-country level, which policies would work best on the ground? Are policies scalable and do they account for the very real differences between countries as diverse as Papua New Guinea, Brazil, and Indonesia?
- What do we know about the supply curve for forest carbon credits? How would these credits affect the global carbon market, as well as the U.S. domestic market?
- What would these mechanisms look like? Are there aspects of credit design that will be attractive to private investors?

Current RFF activities are centered on modeling how U.S. carbon markets will work and designing offsets that can be integrated into the UN Framework Convention on Climate Change and the EU Emissions Trading System. ■

The presentations from this seminar and additional background materials are available at:
▶ www.rff.org/rff/Events/IntersectionClimateDeforestation.cfm.

HOW CARBON SINKS WORK

Global carbon is held in a variety of different "stocks," including oceans, fossil-fuel deposits, the terrestrial system, and the atmosphere. In the terrestrial system, carbon is sequestered in rocks and sediments; in swamps, wetlands, and forests; and in the soils of forests, grasslands, and farmland. About two-thirds of the globe's terrestrial carbon, exclusive of that sequestered in rocks and sediments, is sequestered in the standing forests, forest understory plants, leaf and forest debris, and forest soils.

A stock that is taking up carbon is called a "sink" and one that is releasing carbon is called a "source." Over time, carbon may be transferred from one stock to another. Fossil-fuel burning, for example, shifts carbon from fossil-fuel deposits to the atmospheric stock. Biological growth involves the shifting of carbon from one stock to another; for example, plants fix atmospheric carbon in cell tissues as they grow, thereby transforming carbon from the atmosphere to the biotic system.