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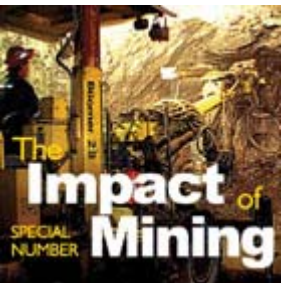
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LATIN AMERICA

## Putting a price on the forest

Barbara J. Fraser. Nov 10, 2002

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### Interview: Ecologist Philip Fearnside

One way to encourage sustainable use of rainforest is to demonstrate the value of preserving it compared to the value of other land uses, such as agriculture. Experts speak of the "services" the forest provides — including its role in the hydrological cycle, biological diversity and absorption of carbon or avoidance of the release of carbon dioxide that would result from burning and clearing.

Credits for avoiding carbon dioxide release came under discussion in negotiation of the Kyoto Protocol on global warming, as carbon dioxide is a principal factor in the greenhouse effect. Ecologist Philip Fearnside, a US-born research professor at the National Institute for Amazon Research Institute, based in Manaus, Brazil, has worked for 26 years on Amazon issues. He spoke by phone with Latinamerica Press associate editor Barbara J. Fraser.



Philip Fearnside

### How do you calculate the value of environmental services?

In the case of Amazonia, I talk about three classes of services — maintaining biodiversity, maintaining the water cycling functions of the forest and avoiding global warming. The carbon [global warming] part has progressed by far the most in terms of international negotiations. Biodiversity is further behind. The biodiversity convention has made some progress on agreeing about who has rights to biodiversity, but it doesn't have [incentives] for countries to maintain forests to preserve biodiversity.

I've been working on quantifying in terms of willingness to pay. [Other people are] trying to figure out what the damages would be of losing different services — if you lose a forest, you lose watershed functions and

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other things. In global warming, you have a certain carbon stock. In the case of Amazonia, you have a water cycling function. But the value of the damages is much higher than what people are actually willing to pay.

**Which countries are most advanced in the area of environmental credits?**

Costa Rica and Bolivia are very anxious to have credit for carbon. Colombia is also interested. Costa Rica's the most advanced.

**Why is placing a value on the hydrological cycle so important for Brazil?**

A substantial amount of the south-central part of Brazil — São Paulo and places like that, where most of the country's agriculture is located — depends on water that comes from the Amazon rainforest. It's also important for hydroelectric dams in that part of the country. Brazil's population is very unevenly distributed, very much along the coast, and the Amazon is sparsely populated. But those other places, which have much more political weight than Amazonia, also depend on [Amazonia]. If you cut down the forest and turn it into a cattle pasture, you're going to have less water [in the south-central area]. In the last year, there was a lot of rationing of electricity in Brazil because there wasn't enough water in the hydroelectric dams (*LP, June 11, 2001*). That sort of problem is going to get worse if you keep on with deforestation.

**How has Brazil incorporated water cycling into national policy?**

Brazil has made a lot of official statements about how deforestation is to be forbidden or reduced, but it hasn't actually happened. You have to be able to take some political risk. It would be worth much more than timber and even soybeans if you could get credit for avoided deforestation. Roughly 200 tons of carbon are avoided for every hectare of forest if you don't deforest it. At US\$20 a ton, that's about \$4,000 a hectare. That land is selling for \$30 a hectare. [With a credit for avoided deforestation] you wouldn't get huge amounts of money, but you would get more than you would by cutting down the forest.

**How do you begin to place a value on biodiversity for credits or tax incentives?**

[Instead of] figuring out what all of these medicinal compounds and so forth are really worth, I try to figure out what people are willing to pay to maintain forests. There is a law of diminishing returns; people will pay a lot for some small areas, but you can't extrapolate that to huge areas like the Amazon. I've used a number from political scientists who are writing about this; it's about \$20 per hectare per year.

**There are other factors, though, like continuity of the forest areas, aren't there?**

If you cut down the last hectare of Atlantic forest, you have a tremendous loss of biodiversity, even though the impact on global warming is the same as cutting down a hectare in the Amazon. But in the Amazon, where you've still got a lot of forest left, for each hectare that you cut down now, you don't lose as much biodiversity.

**Given the current situation, are incentives for avoiding deforestation feasible?**

Some people think that deforestation is basically out of control. [But] in the last year, information from Mato Grosso has been showing a response to government programs to control deforestation.

## What makes that program so successful?

They have a satellite monitoring system, and they're advancing on getting all the properties into a geographical information system so they can see what areas are licensed to be cleared and which aren't, where the clearing was, how many hectares were cleared illegally, and so forth, by property, not just totaled by state. And then they go out and catch people who are doing it illegally. It's set up so you don't have corruption and political influence, which is at least as important as the mechanics [of the system].

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