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August 22, 2009

BY DEGREES

In Brazil, Paying Farmers to Let the Trees Stand

By [ELISABETH ROSENTHAL](#)

QUERENCIA, [Brazil](#) — José Marcolini, a farmer here, has a permit from the Brazilian government to raze 12,500 acres of [rain forest](#) this year to create highly profitable new soy fields.

But he says he is struggling with his conscience. A Brazilian environmental group is offering him a yearly cash payment to leave his forest standing to help combat [climate change](#).

Mr. Marcolini says he cares about the environment. But he also has a family to feed, and he is dubious that the group's initial offer in the negotiation — \$12 per acre, per year — is enough for him to accept.

“For me to resist the pressure, surrounded by soybeans, I’ll have to be paid — a lot,” said Mr. Marcolini, 53, noting that cleared farmland here in the state of Mato Grosso sells for up to \$1,300 an acre.

Mato Grosso means thick forests, and the name was once apt. But today, this Brazilian state is a global epicenter of deforestation. Driven by profits derived from fertile soil, the region's dense forests have been aggressively cleared over the past decade, and Mato Grasso is now Brazil's leading producer of soy, corn and cattle, exported across the globe by multinational companies.

Deforestation, a critical contributor to climate change, effectively accounts for 20 percent of the world's carbon dioxide emissions and [70 percent of the emissions in Brazil](#). Halting new deforestation, experts say, is as powerful a way to combat warming as closing the world's coal plants.

But until now, there has been no financial reward for keeping forest standing. Which is why a growing number of scientists, politicians and environmentalists argue that cash payments — like that offered to Mr. Marcolini — are the only way to end tropical forest destruction and provide a game-changing strategy in efforts to limit global warming.

Unlike high-tech solutions like capturing and sequestering carbon dioxide or making “green” fuel from algae, preserving a forest yields a strikingly simple environmental payback: a landowner reduces his property's emissions to zero.

Yvo de Boer, executive secretary of the [United Nations](#) Framework on Climate Change, said that deforestation “absolutely” needed to be addressed by a new international climate agreement being negotiated this year. “But people cut down trees because there is an economic rationale for doing it, and you need to provide them with a financial alternative,” he said.

Both the most recent [draft of the agreement](#) and the climate bill passed by the House in late June in the United States include plans for rich countries and companies to pay the poor to preserve their forests.

The payment strategies may include direct payments to landowners to keep forests standing, as well as indirect subsidies, like higher prices for beef and soy that are produced without resorting to clear-cutting. Deforestation creates carbon emissions through fires and machinery that are used to fell trees, and it also destroys the plant life that helps absorb carbon dioxide emissions from cars and factories around the globe.

But getting the cash incentives right is a complex and uncharted business. In much of the developing world, including here, deforestation has been tied to economic progress. Pedro Alves Guimarães, 73, a weathered man sitting at the edge of the region's River of the Dead, came to Mato Grosso in 1964 in search of free land, pushing into the jungle until he found a site and built a hut as a base for raising cattle. While he regrets the loss of the forest, he has welcomed amenities like the school built a few years ago that his grandchildren attend, or the electricity put in last year that allowed him to buy his first freezer.

Also, environmental groups caution that, designed poorly, programs to pay for forest preservation could merely serve as a cash cow for the very people who are destroying them. For example, one proposed version of the new United Nations plan would allow plantations of trees, like palms grown for palm oil, to count as forest, even though tree plantations do not have nearly the carbon absorption potential of genuine forest and are far less diverse in plant and animal life.

"There is the capacity to get a very perverse outcome," said Sean Cadman, a spokesman for the Wilderness Society of Australia.

Global as well as local economic forces are driving deforestation — Brazil and Indonesia lead the world in the extent of their rain forests lost each year. The forests are felled to help feed the world's growing population and meet its growing appetite for meat. Much of Brazil's soy is bought by American-based companies like Cargill or Archer Daniels Midland and used to feed cows as far away as Europe and China. In Indonesia, rain forests are felled to plant palms for the palm oil, which is a component of [biofuels](#).

Brazil has tried to balance development and conservation.

Last year, with a grant from Norway that could bring the country \$1 billion, it created an [Amazon Fund](#) to help communities maintain their forest. National laws stipulate that 80 percent of every tract in the upper Amazon — and 50 percent in more developed regions — must remain forested, but it is a vast territory with little law enforcement. Soy exporters officially have a moratorium on using product from newly deforested land.

Here in Mato Grasso, 700 square miles of rain forest was stripped in the last five months of 2007 alone, according to Brazil's National Institute for Space Research, which tracks vanishing forests.

"With so much money to be made, there are no laws that will keep forest standing," John Carter, a rancher who settled here 15 years ago, said as he flew his Cessna over the denuded land one day this summer.

Until very recently, developing the Amazon was the priority, and some settlers feel betrayed by the new stigma surrounding deforestation. Much as in the 19th-century American West, the Brazilian government

encouraged settlement through homesteaders' benefits like cheap land and housing subsidies, many of which still exist today.

"It was revolting and sad when the world said that deforestation was bad — we were told to come here and that we had to tear it down," said Mato Grosso's secretary of agriculture, Neldo Egon Weirich, 56, who moved here in 1978 and noted that to be eligible for loans to buy tractors and seed, a farmer had to clear 80 percent of his land.

He is proud to have turned Mato Grosso from a malarial zone into an agricultural powerhouse. "Mato Grosso is under a microscope — we know we have to do something," Mr. Weirich said. "But we can't just stop production."

Even today, settlers around the globe are buying or claiming cheap "useless" forest and transforming it into farmland.

Clearing away the trees is often the best way to declare and ensure ownership. Land that Mr. Carter has intentionally left forested for its environmental benefit has been intermittently overtaken by squatters — a common problem here. In parts of Southeast Asia, early experiments in paying landowners for preserving forest have been hampered because it is often unclear who owns, or controls, property.

There are various ideas about how to rein in deforestation.

Mr. Carter has started a landowners' environmental group, called Aliança da Terra, whose members agree to have their properties surveyed for good environmental practices and their forests tracked by satellite by scientists at the Amazon Institute for Environmental Research (IPAM), ensuring that they are not cultivating newly cleared land. Mr. Carter is currently negotiating with companies like McDonalds to purchase only from farms that have been certified.

The United Nations program, called Reducing Emissions from Deforestation and Forest Degradation or REDD, will reward countries that preserve forests with carbon credits that can be sold and turned into cash for forest owners through the global carbon market. The United Nations already gives such credits for cleaning factories and planting trees. Carbon credits are bought by companies or countries that have exceeded their emissions limits, as a way to balance their emissions budget.

Daniel Nepstad, a scientist at the [Woods Hole Research Center](#), has mapped out large areas of the Amazon "pixel by pixel" to determine the land value if it was converted to raise cattle or grow soy, to help determine how much landowners should be paid to conserve forest. Most experts feel that landowners will accept lower prices as they realize the benefits of saving forest, like conserving water and burnishing their image with buyers.

Mr. Weirich, the agriculture secretary, said he was skeptical about that. But he, too, senses that there may for the first time be money in forest preservation and has recently decided to be certified by Aliança da Terra.

"We want to adopt practices that will put us ahead in the market," he said.

The initial offer Mr. Marcolini has from the environmental group is perhaps not enough to save the forest here. But, he said, if his land was in a more remote part of the Amazon, with less farming potential, "I'd take

that offer and run with it.”

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