

## Losing Forests to Fuel Cars

Ethanol Sugarcane Threatens Brazil's Wooded Savanna  
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Jaguars, blue macaws and giant armadillos roam the fickle landscape of [Brazil's](#) Cerrado, a vast plateau where temperatures range from freezing to steaming hot and bushes and grasslands alternate with forests and the richest variety of flora of all the world's savannas.

That could soon come to an end. In the past four decades, more than half of the Cerrado has been transformed by the encroachment of cattle ranchers and soybean farmers. And now another demand is quickly eating into the landscape: sugarcane, the raw material for Brazilian ethanol.

"Deforestation in the Cerrado is actually happening at a higher rate than it has in the Amazon," said John Buchanan, senior director of business practices for [Conservation International](#) in [Arlington](#). "If the actual deforestation rates continue, all the remaining vegetation in the Cerrado could be lost by the year 2030. That would be a huge loss of biodiversity."

The roots of this transformation lie in the worldwide demand for ethanol, recently boosted by a [U.S. Senate](#) bill that would mandate the use of 36 billion gallons of ethanol by 2022, more than six times the capacity of the United States' 115 ethanol refineries. [President Bush](#), who proposed a similar increase in his State of the Union address, visited Brazil and negotiated a deal in March to promote ethanol production in [Latin America](#) and the [Caribbean](#).

U.S. companies and investors -- including [George Soros](#) and agribusiness giants [Archer Daniels Midland](#) and Cargill -- are staking out territory in Brazil, expecting even greater growth in biofuels.

"There was already a race for Brazilian ethanol, and President Bush's announcements gave more credibility to the process," said Roberto Rodrigues, former Brazilian agriculture minister, who formed the Interamerican Ethanol Commission with former [Florida](#) governor [Jeb Bush](#) in December.

The Brazilian government and big agribusiness companies say that the expansion of soybean and sugarcane fields doesn't necessarily mean devastation of the Cerrado, which hosts an estimated 160,000 species of animals and plants, many threatened with extinction. They say they plant on wastelands and pastures where cattle once grazed, improving the soil quality and productivity.

But environmental groups argue that as soy and sugarcane displace cattle and less lucrative crops, ranchers are moving farther into the unspoiled areas of the Cerrado.

"There are ranchers substituting sugarcane for cattle in the [Sao Paulo](#) area, for instance, and displacing cattle to the state of [Bahia](#), both in the Cerrado. So what is the point?" asks Ricardo Machado, author of a study about the Cerrado for Conservation International.

Sugarcane and soybeans play a crucial role in Brazil's agriculture, one of the most dynamic sectors of the country's economy. And both are under pressure to expand as a result of the ethanol boom.

Sugarcane is touted by environmentalists as a better option than corn for producing ethanol. Sugarcane ethanol costs half as much to produce, and the process is five times as efficient in its use of fossil fuels.

Lured by the prospect of making ethanol from Brazilian sugarcane, many U.S. firms are trying to catch up with European and Asian investors. The company Soros is backing, Adecoagro, has become one of the main investors in Brazilian ethanol, planning to spend \$1 billion to build three plants over the next five years. [Goldman Sachs](#) and [Carlyle Group](#) are also behind new ethanol investments in Brazil.

In addition, as use of corn-based ethanol grows in the United States, rising prices are influencing American soybean farmers to switch to corn. And as the United States, the world's largest soybean producer, cuts soybean plantings, buyers are looking to Brazil, the No. 2 soy producer, to expand its production. Brazilian soybean production is already at record levels and is predicted to increase another 4.5 percent this year, according to Abiove, an industry association.

"There is a dual pressure in Brazil," Buchanan said. "The direct pressure to expand production of sugarcane and the indirect pressure to expand Brazilian soy, if U.S. soy is reduced."

The agriculture business and the Brazilian government say that there are nearly 350,000 square miles of already-cleared land available for agricultural expansion in the Cerrado. The government says more than 115,000 square miles of cattle pastures could be used -- that's enough land to more than double soybean production and increase sugarcane production five times and ethanol by at least 10.

"Brazil is the only country with a vast amount of land available for immediate expansion of sustainable agriculture. If the U.S. races after ethanol, soybean prices tend to climb and demand will be supplied by Brazil," said Carlo Lovatelli, corporate affairs director for Bunge, one of the largest soy traders in Brazil, headquartered in [White Plains](#), N.Y.

Lovatelli, who also represents companies responsible for 93 percent of all soy traded in Brazil, said that if demand escalates, Brazilian production could double in as little as three to four years.

And the target region has already been chosen: "Cerrado is perfect for agriculture and will be used -- there is no question about it," Lovatelli said.

But Frank Guggenheim, executive director of Greenpeace Brazil, said Brazil's advantage could easily become a disadvantage. "Brazil is in a special situation because of the vast amount of land available, if it uses it in a prudent way," Guggenheim said. "But if it just pushes the agriculture frontier and causes devastation, it will be a disaster."

Brazil is already the scene of the most extensive deforestation in the world, accounting for 42 percent of the world's net forest losses from 2000 to 2005, according to a report by the Food and Agriculture Organization, an arm of the [United Nations](#). Nongovernmental organizations say 7 million hectares of the Amazon were cleared in the past five years by soybean farmers with the help of multinational companies such as Cargill.

Faced with pressure from its clients, Cargill brought other traders together with advocacy groups and established a moratorium under which no soybeans would be bought from devastated areas of the Amazon for two years, beginning July 24, 2006. Although the moratorium ends next year, not even the advocacy groups say the situation will return to what it was before.

The Cerrado, however, has not had the spotlight that the Amazon has, and so the environmental impact of expansion of the sugarcane business into the savanna is under less international scrutiny.

This month, Brazilian Agriculture Minister Reinhold Stephanes announced new measures to avoid devastation from sugarcane plantations. But some groups say enforcement would be effective only with large investments in mapping tools and ground supervision, which the Brazilian government could not afford.

And ethanol investments keep growing. The sugar industry estimates that \$17 billion will be invested through 2012 in 86 new sugarcane processing plants, adding to the 330 plants in Brazil today.

So far, the impact of the U.S. thirst for Brazilian ethanol has been blunted by the 51-cent-per-gallon subsidy paid to American corn ethanol producers and by the 54-cent-per-gallon tariff on imported ethanol. The Senate extended the tariff until 2009, even though Bush signed an accord to jointly promote biofuel production with Brazil.

Nevertheless, of the 680 million gallons of ethanol the United States imported last year, about 500 million gallons came from Brazil, the world's leading ethanol exporter.

"The tariff was not an eliminating factor when we, last year, had \$78-a-barrel oil on a sustained basis," says Roger K. Conway, director for the Agriculture Department's Office of Energy Policy and New Uses. "There certainly could be more imports from Brazil. It depends on energy prices."

Soros's company in Brazil is betting that the United States will have to increase ethanol imports and that a calendar for gradual reduction of the tariff could be established from 2010.

"If the U.S. entirely lifts the tariff, demand for ethanol will go through the roof and the pressure on the environment would be enormous," said a former Brazilian secretary of state for science and technology, José Goldemberg, speaking at a seminar on Brazilian ethanol in Washington last month.