



sugarcane  
ethanol

# BRAZILIAN SUGARCANE ETHANOL

GET THE FACTS RIGHT AND KILL THE MYTHS

GIVEN THE  
ONGOING DEBATE  
ON ETHANOL  
BENEFITS, IT IS  
IMPORTANT TO  
DISTINGUISH  
FALLACIOUS  
MYTHS FROM  
HONEST FACTS







# MYTHS vs. FACTS

## MYTH #1

**Brazilian sugarcane ethanol leads to deforestation in the Amazon Rainforest and other sensitive biomes**

### FACT

Almost 90% of sugarcane production for ethanol is harvested in South-Central Brazil, over 2,500 km (1,550 miles) from the Amazon. The remainder is grown in Northeastern Brazil, about the same distance from the Amazon's easternmost fringe. That is roughly the distance between New York City and Dallas, or Paris and Moscow. There is very little production of sugarcane in the Amazon region (less than 0.2% of Brazil's total production) that is processed at three mills, out of more than 400 industrial plants throughout Brazil that were built in the early 1980s, at a time when the military government provided fiscal incentives to set up industrial facilities in this region to supply local markets. Without subsidies, these mills would not have been economically viable since the Amazon region does not offer favorable conditions for commercial sugarcane production. Current and future expansion is anticipated to continue in South-Central Brazil, primarily on degraded pastures. The sugarcane industry strongly condemns any sugarcane expansion on sensitive biomes such as the Amazon rainforest or wetlands, and supports President Lula's proposed legislation to establish an agro-ecological zoning for sugarcane, prohibiting any future sugarcane production in the Amazon, Pantanal (Brazilian Wetlands) or in any type of native vegetation, including native Cerrado. This bill establishes 92.5% of Brazil's national territory off-limits for sugarcane farming and processing.

## MYTH #2

**Sugarcane expansion displaces other agricultural activities into the Rainforest**

### FACT

According to the Brazilian National Institute for Space Research (INPE), more than 60% of recent sugarcane expansion took place on pastures, mostly degraded, in South-Central Brazil. As such, growing sugarcane in these areas does not increase competition for new land or displace other crops; instead it leads to cattle intensification. According to a 2008 report by the Dutch University of Wageningen, 5.4 million hectares of pasture land were released for other uses between 2002 and 2006, while the cattle herd increased by 18,383 heads. Brazil has a total pasture area of 159 million ha, 33 times more than the area cur-

rently used to produce sugarcane ethanol. Amazon deforestation, which has been going on for many decades, has been caused by an unfortunate and complex set of social and economic factors completely unrelated to the expansion of Brazil's sugarcane industry. One of the main issues is the absence of clear land titles, which leaves the region exposed to rampant land speculation and squatting. More than 45 percent of the Amazon is officially protected and this figure keeps increasing. The rest is divided between areas that are supposed to be public (23%) and private (32%). But the truth is that only 4% of the private areas have legal titles. As a result of the lack of clear property rights and enforcement of the law, illegal logging is indeed the major "cash crop" of the rainforest. Finally, over 20 million people currently live in the Amazon region. Tragically, to most of them, the standing forest has no value for their immediate well-being or economic survival.

### MYTH #3

#### **Brazil is being overrun by sugarcane plantations in detriment of food production and prices**

##### FACT

In 2009, sugarcane for ethanol production in Brazil occupied 5.0 million hectares, or roughly 1.5 % of the country's 330 million hectares of arable farmland. The area cultivated for sugarcane and used for ethanol is less than one-fourth of Brazil's corn acreage, one-eighth of soybean fields, and one-thirty fifth of the land used for cattle ranching. With only 1.5 % of its arable land dedicated to sugarcane for ethanol production, Brazil has been able to replace half of its gasoline needs with sugarcane ethanol, and still increasingly generate additional volumes for export. In addition, while cane production has increased steadily in recent years, food production in Brazil has grown dramatically. The 2009 harvest for grain and oilseed reached 149 million metric tons, approximately twice that of ten years ago. Brazil is widely recognized for its diversified and highly efficient agricultural sector – it is the world's leading exporter of beef, coffee, orange juice, poultry, ethanol and sugar, just to name a few of the top commodities.

### MYTH #4

#### **Ethanol production and use cause more damage to the environment than fossil fuels**

##### FACT

Ethanol can be produced from a wide variety of feedstocks, with different environmental impacts depending on how each type is produced and processed. Claims that sugarcane ethanol production could actually increase carbon emissions are flawed. Accord-

ing to a recent report published by the United Nations Environment Programme (UNEP), Brazilian sugarcane ethanol reduces greenhouse gas emissions by 75% to 143% when compared to gasoline, a reduction unmatched by any other biofuel produced with existing technology and comparable to what would be attained with second-generation biofuels. In fact, when compared to crops such as corn or soybeans, sugarcane captures more carbon because it is a unique semi-perennial crop only replanted every six years. In addition, the use of degraded pastures – the expansion area of choice for sugarcane in Brazil – actually generates a carbon credit, as sugarcane captures significantly larger amounts of carbon than the quantities originally stocked in this type of land. Sugarcane by-products (bagasse and straw) are used to produce clean, renewable electricity. Official government data indicates that sugarcane mills produced more than 1,600 average MW of electricity in 2009, of which 670 MW was surplus electricity. Bioelectricity from sugarcane will expand from 3% to 15% of Brazil's electricity demand by 2020 and will obviate the need to increase the number of fossil-based thermal power plants.

### MYTH #5

#### Ethanol production consumes more energy than it generates

##### FACT

The energy balance ratio of a given fuel is the ratio between the energy content in the fuel to the energy spent to produce it. When the entire process is considered, from the planting of sugarcane to the use of ethanol as a motor vehicle fuel in what is known as a well-to-wheel analysis, sugarcane ethanol has an energy balance ratio of 9.3 units of clean, renewable energy for every unit of fossil energy spent in its production and transportation stages. On the other hand, ethanol produced from other feedstocks has significantly lower energy ratios. Lifecycle studies conducted by the U.S. Argonne National Laboratory have shown that dwindling fossil fuels have a sharply lower energy balance ratio than any biofuel, but especially sugarcane ethanol.

### MYTH #6

#### Sugarcane ethanol is a unique solution from which only Brazil can benefit

##### FACT

Over 100 countries grow sugarcane and most could produce and use ethanol, repeating Brazil's successful experience. The potential for global expansion is impressive. According to the Food and Agriculture Organization (FAO), only 10% of the world's 200 million hectares (excluding forests and protected areas) available and suitable for sugar-

cane production are actually used. Most sugarcane producing countries are emerging markets in tropical regions that would benefit tremendously from an opportunity for significant economic rural development. Ethanol production and use create jobs, foster development of new technologies, allow for the introduction of cheap renewable electricity in rural areas, cut down on oil imports and provide new export opportunities. Ethanol production in 100 countries would also enhance energy security by reducing world reliance on only 20 oil producing countries.

### MYTH #7

**Brazilian sugarcane ethanol is cheap because the industry uses slave labor**

#### FACT

Brazilian law prohibits any form of degrading labor condition, not just slave labor. UNICA and its members have united to fight any labor rights violation. In 2009, the Brazilian government, industry leaders and workers' unions launched the "National Commitment for the Enhancement of Labor Conditions in Sugarcane Production." The sugarcane industry has voluntarily committed to abide by a set of thirty best practices, which will be audited by an independent third party. In many cases these practices go beyond the text of the law. These recognized best practices include the direct hiring of workers for manual planting and harvesting of sugarcane, thus eliminating intermediaries that have been identified as a source of concerns by labor unions. Other key points are improvements in employee transportation, added transparency in compensation calculations, support for migrants hired from other regions, enhanced health and safety practices, and additional support for collective bargaining. For its part, the government will introduce a package of specific public policies for education, retraining and job placement. This is a gradual process of evolving standard practices, inspired on the simple and groundbreaking idea that the market itself should recognize the value of this commitment, fostering effective changes in the sector's labor practices. The sugarcane industry already ranks second in terms of the highest average salaries paid in Brazilian agriculture, second only to soybean farming, which is highly mechanized.

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