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Weighing the Merits of Corn Ethanol

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Initially, the idea of using corn to produce ethanol seemed to be a decent suggestion. My trips to the pump began to cost less, and knowing ethanol is a renewable source made me feel responsible. Indeed, ethanol has allowed alternative sources to be researched while demonstrating consumers' favorability toward renewable energy so long as it's inexpensive.

The principal reason I am wary of corn ethanol concerns the classic debate between food and fuel. Dr. Perrin, a University of Nebraska economics professor, asserts that while the food vs. fuel debate is hardly relevant in the US, ethanol may have caused the farm gate value of grain to rise to \$0.042 per \$1.00 of food expenditures—a 1.2% increase in US food costs. The USDA reports that food accounts for 10% of consumer income, and increased costs due to ethanol account for .12% of income.

In the developing world, corn is a staple crop. Dr. Perrin suggests that in these countries grain may represent 30% of food expenditures and food may account for 70% of income. Large price increases in grain would devastate those individuals.

The food v. fuel debate becomes more severe as we consider the growing rate of the world's population. The United Nations predicts the world population will hover between 9.2-10.5 billion people by 2050. Feeding that many people will be no easy task. According to the CIA's World Fact Book, the world's lands mass is 29.1% of the total area of the Earth, and a mere 38% of that mass is used for agricultural purposes. As the world becomes more crowded, increasing agricultural land for ethanol development over human development will be hard to justify.

The efficiency of corn-based ethanol is a contentious matter as it's difficult to find unbiased data. Methods used to gather statistics comparing corn ethanol to gasoline must be examined carefully. When corn-based ethanol first took off in the US, the efficiency was poor. Due to innovations in technology, efficiency has improved. A study done by the College of Agriculture and Natural Resources at the University of Nebraska-Lincoln found that the energy output/input ratio of ethanol has improved from 1.2: 1 to around 1.5-1.8: 1. A study by the University of California-Berkeley stated that corn-based ethanol requires 29% more energy to

produce than corn ethanol yields. The costs of producing a gallon of gasoline versus a gallon of corn ethanol are highly disputed, weakening the argument for corn ethanol's efficiency.

Both the input and external costs of producing corn ethanol are high. Corn must be planted, irrigated, fertilized, harvested, refined and transported. The tractors, trucks, barges, and trains, used in getting ethanol from the field to the pump run on fossil fuels. Runoff from fertilizers used to grow corn further pollutes the environment and contaminates water supplies. The dead zone in the Gulf of Mexico is an example of the environmental impact of excess nitrates from fertilizer runoff. All these factors contribute to the "indirect land use cost" of ethanol (ILUC). When the ILUC is factored into ethanol life cycle analysis, ethanol hardly seems a better choice.

As the demand for ethanol grows, more corn must be produced. Devoting more land to corn reduces the amount of other crops that are grown, thereby raising prices. Livestock producers must compete with the ethanol industry for corn. The price of feeding livestock with corn has risen. Prices took an additional beating after the Corn Belt was plagued by severe drought this summer. The government's renewable fuel standards will further increase demand for corn as the standards progressively become tougher.

In essence, I don't believe corn ethanol is the ultimate solution to renewable energy. If we are going to invest money towards renewable energy, we ought to consider funding research of other, less expensive sources. The argument has been made that the research needed to further the innovation of alternative sources would be extremely costly. To resolve this issue, the U.S. might take a lesson from the UK, and institute a gasoline tax. In my opinion corn-based ethanol is but a short-term solution to a much larger problem.

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