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Q and A: What Is the Outlook for Non-Food Based Biofuels?

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A worsening drought in South America has caused downward revisions to corn production estimates, while Brazil continues to struggle with a shortfall in last year's sugarcane crop. Last month, the new director of the United Nations' Food and Agriculture Organization criticized the United States for the use of corn to make biofuel, saying it raises prices for the cereal globally. Meanwhile, U.S. bio-technology company Bio Architecture Lab announced last month that it will open a pilot plant in Chile to develop biofuels from seaweed. What is the outlook for biofuels in Latin America given competing demand for food resources? Will non-food based biofuels emerge as a viable large scale alternative in the medium- to long-term? What steps should policymakers be taking to ensure both food and energy security?

A: Eric Lundin, global outlook for alternative liquids manager at PFC Energy:

"The production outlook for biofuels in Brazil is still positive, and barring some transformative technological advances it will likely remain predominantly cane-based for the foreseeable future. Although high prices of sugar, ethanol and corn have tended to highlight the food vs. fuel debate, Brazil retains considerable potential for production expansion as sugar cane still uses a very small fraction of the country's active cropland and large areas of grassland and cerrado can still be brought into production. The food vs. fuel debate has persisted in part because of disappointing production from multiple crops for varying reasons worldwide, and supply simply has not kept up with growth in demand (including biofuels). A return to growth and yield trends for various crops, especially corn in the United States, would go a long way toward moderating prices and ensuring supply for both food and fuel. Shifting biofuels production toward advanced second and third-generation production methods (using marginal land) would reduce competitive pressures, but these technologies remain elusive and it is unclear when competitive commercial production could be achieved. In Brazil, sugar cane ethanol production is so efficient that it should probably remain the focus of policymakers. The feasibility of bringing additional land into agricultural production should be examined, given the success of previous efforts led by Embrapa, along with requirements for supporting infrastructure (potentially including ethanol pipelines). In addition, while ownership of national resources remains a sensitive issue, some relaxing of investment rules may be necessary to help ensure funding availability for these projects."

A: Kirk Haney, president and chief executive officer of SG Biofuels:

"Over the past several years, we have seen a consistent trend for biofuels in Latin America: Increased demand for sustainable alternatives to petroleum from the energy and aviation sectors while production levels fall considerably short. The bottleneck for low-cost and sustainable feedstock has placed a stranglehold on the region's ability to become a global biofuels leader. While this is due in part to depressed production levels and increased costs for sugar cane, it is more significantly due to the struggles that producers have experienced scaling their lab success to commercial levels. For many reasons—food security included—Brazil's importation of corn-based ethanol from the United States cannot be a long-term solution. It is for these reasons that non-food energy crops are emerging as the most viable alternative over the short- to medium-term in Latin America. Non-food energy crops such as jatropha, which grow on marginalized land not suitable for food production, avoid many of the negative ramifications associated with using soy- or corn-based feedstock relative to food production and availability. These crops are commercially viable today, with the yields and economics continuing to improve through breeding and biotechnology advancements. In fact, a new report released by Bloomberg New Energy Finance indicated that because of its low production costs, jatropha is the best near-term feedstock to be deployed on a commercial scale for bio jet fuel production. Non-food crops also enable growers and producers to meet government mandates that call for a portion of biofuels feedstock to be produced via community farming initiatives—a 30 percent target in Brazil."

A: R. Kirk Sherr, president of Regester Larkin Energy:

"Due to shortfalls in biofuel feedstock due to drought, the outlook for biofuel production in Latin America in the mid-term is not promising. In spite of the region's many natural advantages for cultivating crops amenable to biofuels use, unpredictable weather and rising food prices will stagnate biofuel production in the near to mid-term. Based on the rise in sugar prices over the last three years, the interest of sugar cane producers to use their crop as a feedstock has shrunk and they are now diverting production back towards food. Commercial scale cellulosic ethanol plants are just now being built in the United States and Canada, but most cellulosic ethanol remains relegated to demonstration-size projects. As biofuels infrastructure is built, feedstock competition will begin to define the midterm outlook for Latin America and globally. Nevertheless, the feasibility of cellulosic ethanol and other second generation biofuels at a commercial scale has been demonstrated and investment in biofuels continues (as evidenced by BP's \$680 million investment in the Brazilian ethanol sector in 2011). In the long term, with technology transfer and investment, biofuel companies are likely to leverage Latin America's natural advantages and large amounts agricultural waste for biofuel production. It will be interesting to see how the dramatic increase in U.S. shale gas production affects the biofuels commercial equation region-wide over the next few years."

The Advisor welcomes reactions to the Q&A above. Readers can write editor Gene Kuleta at gkuleta@thedialogue.org with comments.