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What Trends are Shaping the Future of Biofuels?

Inter-American Dialogue's Latin American Energy Advisor

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Q and A: What Trends Are Shaping the Future of Biofuels?

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Biodiesel production in Argentina this year is expected to climb 60 percent as compared to 2010. Meanwhile, in Brazil, industry leaders have called the biofuels sector "ripe for consolidation" as it needs to increase capacity and the country recently signed cooperation agreements with the United States to advance aviation biofuels. Meanwhile, high food prices have led to criticism that producing biofuels, especially from corn ethanol in the United States, diverts agricultural production from food crops. How will the development of biofuels play out in Brazil and elsewhere in the Americas? What are the most viable solutions for the food vs. fuel debate in the short- and medium-term? Will enthusiasm over the burgeoning hydrocarbon resources in large countries like Brazil and Colombia reduce the hoped-for investment in alternative fuels?

A: Jerry Weller, former congressman from Illinois, co-CEO of U.S. Strategies and member of the Inter-American Dialogue:

"As we look at the current rise in oil prices juxtaposed against near record prices for corn, the famous quote 'those who don't know history's mistakes are bound to repeat them' comes to mind. Today, oil hovers above $100 a barrel, corn futures have risen 82 percent and soybean oil futures by 38 percent in the last 12 months alone. The simultaneous rise of energy and food price inflation reminds us of the political consequences of using food crops for fuel. Corn-based ethanol is not a viable long-term solution to reducing reliance on imported oil for Central America or the Caribbean. Other alternatives are needed—alternatives that do not create a new problem while trying to solve another. There is no doubt that biofuels are playing and will continue to play a critical role in the energy portfolio of countries throughout South and Central America. As populations—especially the middle class—grow, we will continue to see parallel demands for more energy and more food supplies. The key will be the ability of nations to avoid nonfood sources in the quest to expand their energy portfolios. Nonfood energy crops such as jatropha provide a real short-term opportunity to broaden the energy mix because of their ability to grow in poor soils that are not ideal for food production. Over the longer-term, new technologies such as those focusing on algae will likely capture market share. These new alternatives are critical for the region to achieve a reasonable balance of energy security and access to food supplies. Just as using food crops for fuel will repeat history's mistakes, so too will the region's continued reliance on an energy portfolio disproportionately focused on imported petroleum. President Obama's commitment to reduce U.S. oil imports by one-third is a step in the right direction. So too would be a re-energized commitment to the 'Energy Partnership

for the Americas,' an effort with significant potential that has yet to materialize any significant results."

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

"There is a common misconception that the production of biofuels and the promotion of food security are mutually nonexclusive. The fact of the matter is nonfood bioenergy crops have the potential to reduce food poverty in developing nations by creating jobs and economic development opportunities that increase access to food for rural populations. The University of Illinois recently published a study revealing that more than 1 billion hectares of marginalized, abandoned land is available for bioenergy production worldwide, the use of which would not impact food production. This includes more than 250 million hectares in South America alone. By developing nonfood, non-edible crops like jatropha that grow on marginalized, undervalued land, the opportunity exists to provide new revenue streams for rural farmers and reduce the migration of populations toward urban centers. In Brazil specifically, the government has mandated that 30 percent of feedstock for biofuels must come from community-based farming, in large part to promote rural economic development and jobs in regions where food crops do not thrive. This includes areas such as the semi-arid Northeast region, which includes more than 75 million hectares of land not suitable for food production. Jatropha—because it grows on marginalized soils, is non-edible and cannot be diverted into the food supply—provides the greatest short- and medium-term opportunity to address increasing biodiesel demand while at the same time providing revenue and jobs in areas such as the Northeast of Brazil. And it is the opportunity to provide a new economic resource to rural populations that is driving much of the interest in biofuels in countries like Brazil and Colombia—creating a positive environment for investment and development that will thrive independent of new or future hydrocarbon resources."

A: Kirk Sherr, president of Regester Larkin Energy:

"Brazil, with its vast area dedicated to sugar cane, is responsible for some 25 percent of current world sugar production and is also a key producer of ethanol. With sugar prices rising rapidly in recent years—prices have more than tripled since 2007— today it makes economic sense for some producers to dedicate more crop to sugar versus ethanol production. At the same time, investors have more interest in Brazilian ethanol companies, including the $680 million acquisition by BP earlier this month and many prior transactions, because of a growing awareness that biofuels are here to stay. However, the sugar ethanol sector continues to be relatively fragmented in Brazil and consolidation should continue; Brazil has adequate room for both food-crop and fuel-crop production, and the debate on the issue there will likely be less dramatic. But, so long as both oil prices and food crop-based ethanol prices are rising worldwide, we should expect the international debate to continue. In the United States, the food-versus-fuel issues are complicated by a web of national- and state-level political issues that have led to significant subsidies for ethanol producers (often essential for smaller ethanol producers) combined with tariff protection against more efficient producers like Brazil. Nevertheless, the growth of biofuels in the United States, Brazil and other countries is probably irreversible at this point, and it is unlikely that biofuel investments will be displaced by hydrocarbon investments.

More likely is a scenario where biofuels become yet another important fuel alternative, with investments tracking standard return calculations as subsidies are gradually removed."

A: Arnaldo Vieira de Carvalho, senior energy specialist at the Inter-American Development Bank:

"For several decades, Brazil has demonstrated that it is possible to produce ethanol from sugar cane without sacrificing food production. In fact, Brazil is the world's largest producer and exporter of several agricultural products besides sugar and ethanol (Brazil is ranked first in the production of beans, mate, coffee, oranges and tobacco). With only 1 percent of its arable land being used for sugar cane plantation for ethanol production (3.4 million hectares), Brazil is already displacing half of its gasoline consumption nationwide. Brazil has a large land area but it also has high energy consumption (about 40 percent of LAC). Several other agricultural products use more acreage than sugar cane and their acreage is growing faster; soybean plantations use 6 percent of Brazil's arable land while maize/corn and pasture accounts for 4 and 59 percent respectively. And there is still 22.5 percent (77 million hectares) of arable land available without moving into sensitive areas. If Brazil doubles its ethanol production using available pasture land, it will replace 100 percent of its gasoline consumption and its pasture area would only be reduced from 59 to 58 percent of the country's arable land. Moreover, increased demand for biofuels could in fact increase food production through intercropping or crop rotation, with positive effects on rural development, technology innovation, job creation, family income generation and poverty reduction in rural areas. With regard to the biofuels aviation market, this will offer an excellent opportunity for the region to play a leading role with competitive value-added products that contribute to its social and economic development and increase the numbers of local jobs. Most importantly, this new biofuel market niche appears to have a much better integrated and coordinated stakeholder support structure than the traditional gasoline/diesel sector, where biofuels have encountered a series of regulatory and market barriers in Latin America. With its strong environmental component, the biofuels aviation market is expected to encounter fewer obstacles, especially due to the 'drop-in fuel' approach being adopted by the aviation industry. Latin America-based airlines have had numerous biojet fuel demonstration/ test flights in 2010 (Brazil) and 2011 (Mexico) and several others are planned for 2012, employing different feedstocks, including jatropha, algae and sugar."

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