Safety Security : Food Water

Biofuels: Burning Food?

Are biofuels responsible for higher food prices and a growing number of hungry people? Terri Raney, senior economist at the Food and Agriculture Organization of the United Nations (FAO), explains the links between food and fuel.

Terri Raney, Food and Agriculture Organization of the United Nations

"Biofuels demand is likely to keep basic food commodity prices 10 to 15 percent higher than they would have been otherwise." (Photo: Caleb Raney)

Are biofuels to blame for recent food price rises?

Most estimates suggest that biofuels are responsible for between 25 and 40 percent of the increase in food prices. We are concerned that the rapid growth in biofuels, driven by government policies, is creating stresses on a world food system that has not had time to adjust.

Half of the increase in global cereals demand between 2005 and 2007 came from biofuels. This clearly poses risks for world food prices and a challenge for food security. Looking ahead, the FAO and OECD project that biofuels demand is likely to keep basic food commodity prices 10 to 15 percent higher than they would have been otherwise.

What are the biofuel crops that have the biggest impact on food prices?

Biofuels derived from food crops, such as maize, wheat, or oil crops, clearly have the most immediate impact. But you must remember that all crops compete with each other for land, water, and other resources. Using non-food crops for biofuels can still threaten food security by causing farmers to shift land away from the production of food crops to biofuel crops.

Given that all crops compete with each other, using the ones that are most economically efficient for biofuels can reduce competition meaning that more resources are left over for food production. Right now, sugarcane-based ethanol is the only biofuel that is economically competitive with petrol-based fuels. Maize-based ethanol is more costly to produce.

In the long term, we also have to consider the impact on the

environment, on land, and water resources. We are calling for slower expansion of biofuels production to give the agricultural sector a chance to expand production through yield increases rather than land area expansion.

And what are the biofuel crops that make environmental sense?

The most environmentally sustainable feedstock appears to be sugarcane grown on existing cultivated areas, under rain-fed conditions, with minimal fertilizers, and other chemical inputs. Palm oil is also quite good. Production of maize, rapeseed, and sugar beet are not as good in terms of offsetting CO2 emissions.

Measuring the environmental impact from pump to tailpipe is only part of the story. The key factors are concerned with land use change. Producers are clearing forest and ploughing new land that releases CO2 while applying fertilizers that release nitrous oxides. We recommend feedstocks with minimum new land use and minimum application of fertilizers.

Biofuel Gallery

Is there enough land for biofuels and for food?

We are not talking about a major demand on the global land base. Less than 2 percent of land is being used for biofuels. We expect that to increase and we have seen land coming back into production in Europe while there is potential for agricultural expansion in Latin America and parts of Africa. But it will still be only about 5 percent of agricultural land.

In some developing countries there has been a lot of investment in jatropha plantations on marginal land for biodiesel production. However, people may be already using that land, maybe not for farming but perhaps for grazing or to gather wild foods. They are likely to be poor or marginalized groups, and countries must protect their rights and their food security.

Can biofuels benefit farmers in the developing world?

We do see biofuels as an opportunity. About three quarters of the world's poorest people depend on agriculture for their livelihoods. For a very long time food prices and investment in agriculture were depressed. Now, if farmers can increase production, higher prices can be turned into income gains for them.

Developing countries need to invest much more in agricultural

productivity and market infrastructure to be able to take advantage of higher commodity prices. But this will only happen if proper policies are put in place. What we see right now is OECD countries heavily subsidizing and protecting their biofuels sectors and so developing countries do not have any opportunities.

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If OECD countries stopped subsidizing biofuels, would food prices come down?

Put simplistically: Yes. Even at high petroleum prices these biofuel feedstocks are not competitive without subsidies. If we eliminated production subsidies and trade barriers for ethanol, production and consumption would decline by about 10 percent. It would decline in highly subsidized regions but increase in Brazil, India, or Thailand where ethanol costs less to produce and, in some cases, has lower environmental costs.

Looking 10 to 15 years into the future, we have calculated that if you reduced the demand for ethanol by 30 percent this would have a tendency to reduce maize prices by 10 percent, and vice versa. There is a clear relationship between demand for ethanol and the price of corn.

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