

"MAPping the Future" Column

by Corazon PB. Claudio

Despite the debate on the pros and cons of biofuels, some countries are fast increasing their biofuels production. The European Union, the largest market for biofuels, aims to make biofuels account for 5.75% of all of its transport fuels by 2010 and 10% in 2020. In the Association of South East Asian Nations, Thailand is expected to be the region's leading producer of biofuels.

What should we do in the Philippines? Biofuels are part of the uncertain energy and food environment that demands more serious decision making. It involves values and preferences of many decision makers and stakeholders, from farmers to top policy makers. Decisions taken now may have long-run implications on the use of lands and other resources.

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For similar important cases beset with uncertainty, most big corporations in the world apply decision analysis. This is a discipline that provides a method for making logical decisions in complex, dynamic and uncertain situations. In applying it, we must first define the values and preferences of the decision maker (or the group of stakeholders), specify the decisions to be made, and identify the alternatives.

The relevant values and preferences in this case could be a) increased income for farmers through agricultural development; b) sustainable and secure food, feeds and fuel sources; and c) greening of the environment by using cleaner fuel. Most other concerns can be covered by one of these.

Reacting to the rice crisis, some legislators now call for suspension of the implementation of the Biofuels Act of 2006, which mandates the progressive production and use of biofuels. This is one decision point that is clouded with worry. Much of the worry results from inadequate analysis of the issues and alternative biofuel systems (which include choices on feedstock and production--which lands, what technologies, etc.) The worry and difficulty of a decision problem often disappear when new alternatives are generated.

The Issues

The most important issues associated with biofuels are rural poverty, food security, energy security, and the food vs. fuel issue.

Various groups in other parts of the world have been studying these issues. We can refer to the results of their studies, since we have not done our own in a significant way.

One ongoing study is funded by the Bill and Melinda Gates Foundation at Stanford University. The research team includes Prof. Walter Falcon, former Chair of IRRI, who kindly shared with me an initial report on their research. Their policy research on the food vs. fuel issue involves a quantitative assessment of the effect of biofuels expansion on food security in the developing world.

Rural Poverty and Food Security

The Stanford study concluded that "it is likely that aggregate investments in agricultural development at the national or regional level will be more successful in reducing rural poverty than individual biofuels investments by specific companies or groups."

Hence, to achieve "increased income for farmers through agricultural development" and "food security," we need to invest more in agricultural development, including sustainable technologies and infrastructure for food production and marketing and smallholder farmers' access to land, capital, credit, and technology.

The investments must also ensure availability of water, which is essential to food production, but is now the subject of another crisis.

Biofuels may not help much in achieving increased income of farmers. But suspending the Biofuels Law will neither raise incomes nor secure food supply. Adequate investments in agricultural development will most likely do both.

Energy Security

Energy security is a major issue facing us. In applying decision analysis on energy supply, the availability and price of imported fuel are uncertain variables that we cannot control. We can only adopt measures for adjusting to them.

We need to focus on what we can control. Producing our own fuel, such as biofuels, is one of them. How to do so is the challenge that requires work.

We need to attend also to energy demand, e.g., by applying energy conservation measures. Biofuels production that provides for active participation of local people could also lead to improved demand management.

Food versus Fuel

The issue seems to boil down to what crop to plant for biofuel and where, so that it will not compete with food needs.

We still have many underutilized lands so I will focus more on the crop. Emerging crop choices in the Philippines are coconut (which is already being used for biodiesel production), sugar cane (which will be the feedstock for a bioethanol plant that will soon operate in Negros), sweet sorghum (which the International Crops Research Institute for the Semi-Arid Tropics recommends as major feedstock for bioethanol), jatropha (which receives priority government attention), and malunggay (which can produce oil for both food and fuel). All, except jatropha, have food, feed and fuel uses. Algae and waste biomass, which are gaining more interest in other countries, can also be produced in the Philippines.

Some major considerations in choosing a feedstock are energy yield of a crop, production costs and returns, effects on farmers and employment, and impact on the environment (on soil, water, biodiversity, land use, and climate).

Preliminary results of the Stanford study have concluded that the effects of biofuels on food prices can be traced through the responsiveness of supply and demand of the crops to prices (which depends on substitution possibilities in production and consumption for food, feed and fuel), the ability of countries to expand land area and raise yields for biofuel feedstocks, market integration between the biofuels and fossil fuels markets, and policy incentives.

The long-run effects, the study says, depend on changing incomes, tastes, biofuels research and development, and infrastructure investments.

Recommendations

The EU hopes to achieve its goals by cultivating more land, increasing land productivity and crop quality with modern plant breeding techniques and biotechnology, and focusing on the production of biofuels from cellulose and agricultural waste (the second generation fuels) instead of starch, sugar and oils (the first generation ones).

How do we hope to achieve ours?

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First, we must strengthen our research and development capability so that we can analyze well existing biofuel alternatives, create new ones, and give well-thought out responses to issues raised. We must mobilize our best scientists and provide them with adequate laboratory and other infrastructure facilities so they can help create new or improved fuel, as well as food and feed, sources and systems.

The ripple effects of biofuels on food security, as the initial Stanford report concludes, depend on the country and its policies. In our country, we must improve our policy making, conduct more rigorous decision analysis, and take actions faster. We must invest more in agricultural development now if we want to achieve food security.

It is not clear what difference suspension of the implementation of the Biofuels Act will make. But if the approved Biofuels Act is flawed to begin with, we should, perhaps, suspend law-making until such time that more thinking goes into it.

Editor's Note: The author is the president of the EARTH Institute Asia, Inc. and Director/Host of DZRH's Kalikasan, Kaunlaran!, which featured biofuels on its May 21st talk show. A Balik-Scientist and TOWNS Awardee for Science and Technology, she served as Coordinator of the Philippine Non-Conventional Energy Program in the late '80s. Feedback at map@globalines.com.ph

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