

Workshop on Biofuel Development in Southeast and East Asia: Policy Issues and Research Agenda

1. Rationale:

With rising concerns over energy security and the environment, governments have been aggressively encouraging biofuel production. Current biofuel technologies use agricultural feedstocks such as grains and sugar for ethanol and rapeseed and palm oil for biodiesel. Brazil mandates biofuel consumption and uses about half its sugar cane to produce ethanol. The United States has tax incentives, subsidies, and consumption mandates for biofuel production. At the current pace of investment, the US is planned to produce 15 billion gallons of biofuel by 2010. This means that between one-quarter and one-half of the current US maize crop will be used as feedstock. Germany, France, Canada, Australia, Japan, China, Indonesia, Malaysia, the Philippines, Thailand and many other developed and developing countries also have their own plans to expand the production of ethanol and biodiesel.

Implications on food security

While biofuels could offer the potential of huge new markets for agricultural producers, there are also growing concerns on its implications to food security, poverty and environments. For example, if the above plans—which in many cases are in place and being implemented, at least partially—are realized, a large share of the world's food supply will be diverted away from traditional food marketing channels. And, to the extent that food demand remains at the same rate, there is no doubt that the emergence of biofuels will have a major impact on world food prices that could hurt the poor, both in the urban and rural areas. The occurrence of this phenomenon is not very distant. In fact, it is occurring now. An apparent example is the maize market. Despite the expansion of world maize supply in recent years, the US maize price significantly rose to reach a historical high of US\$ 3.5 per bushel in April 2007 or a 75% rise from the \$2.00/bushel at the end of 2005. This rise in US domestic price has affected international prices of maize that has been transmitted to markets in the rest of world. Other commodities such as meats and soybean have also been rising accordingly.

It is worth to note that the changes in the prices of maize and of other related commodities were associated with only a small increase in bioethanol production in the USA (from about 3.4 billion gallons of biofuel production in 2004 to 5 billion gallons in 2006). This recent world food price movement was a consequence of an initial stage of a biofuel development program in the US. With other countries rapidly following, however, the concerns multiply by hundredfolds on the possible implications of emerging global biofuel industry to food supply, food security and the plight of the small rural farmers.

Who actually benefits?

High food prices—perhaps very high food prices—are always good news to producers. But there are as many concerns as there are reasons for being positive and jubilant about high food prices. The high food prices will be good news for biofuel feedstock producers, but for which ones? Maize, sugarcane, cassava and palm oil farmers will benefit, but what will happen to the small farmers who produce rice, horticultural crops, livestock and other commodities that cannot be used as feedstock for biofuel production? Will poor food producers and resource-limited farmers in countries with big biofuel programs be able to take advantage of the higher prices? Will farmers in poor countries that do not have biofuel programs benefit or will further be pushed downward? Will the livestock producers and others that use maize and soybeans as inputs still earn decent net incomes? What about those citizens in a developing country that are net consumers, including the 100s of millions of poor people that live and work in cities? Likewise for the households in rural areas that are net consumers (because they are either landless farm laborer or cultivate farm plots that are so small to feed the entire family for the whole year), what do they stand to gain from the increasing move towards biofuel production?

Concerns on resource availability

Additionally, will there be an expansion of sown area that is usually the producers' response to higher prices? Where will the land come from in Asia, particular in Southeast Asia where most lands have been intensively used in agriculture? The Indonesian archipelago? Malaysian forest land? Thailand paddy field? The Philippines new land? China's hillsides? Will Chinese farmers plow up land that has been in the Grain for Green Conservation Program since the late 1990s? What will be the net effect of all these changes on agricultural and the rural environment?

Biofuel program is also likely to have significant spatial implications in large countries. For example, what will be the effects of biofuel development on land use and water availability, especially as it is constrained or enhanced by regional, geographical, and physical factors across the spatial landscape? The problem (as in the real problem faced by policy makers) is that the availability of feedstock is dependent on the availability of local resources (e.g., land and water) and substitutability of different crops locally. Decision makers need to know both stocks of local resources and whether or not one crop can substitute for the other crops in regions where biofuel feedstock is produced. This is extremely important for large countries, like China, India and Indonesia.

Complex interlinkages on resource and product use

In the rush to promote biofuels, few people have actually asked the questions enumerated above. And even for some of them who would have asked these questions, the answers are even fewer and perhaps none. The complexities, however, are enormous: there are linkages among crops because different crops can be planted on the same land. There are linkages among agricultural commodities because if the demand for one product rises and its price goes up, consumers will switch to other commodities (and which could eventually induce its price to rise as well). There are linkages between crops that are produced and those that are used as inputs. There are linkages among crops that are grown in different regions of the country; among crops that are grown by different groups of producers; and among crops that are grown in different countries altogether. There are linkages between the price of food and a person's status as a net buyer of food (or net seller of food). And, there are linkages between production and the environment. And as these series of linkages continue and expand, that between the agricultural and non-agricultural sector will likely happen (e.g., transportation, industry and energy sectors).

Implications on Doing Business with the Agriculture Sector

There are other potential concerns that need to be pointed out. If food prices become linked with prices of energy, it is possible that all of the uncertainty that characterizes energy markets could be transferred to the agricultural sector. Energy traders currently have instruments (e.g. insurance and option contracts and hedging trades) to minimize their risk. To date, most farmers, especially those in developing countries do not employ any of these instruments.

There also could be impacts on: R&D; employment; land use patterns, water uses, and industrial investment. The list is endless and can go on and on.

Motivations for Biofuel Development: Are they Sound?

If there are all of these questions, why are governments and corporations and individuals rushing to get into the biofuels business? The motivations for the expansion of biofuels are complex and multidimensional. The key one, of course, is the search for greater energy security. With the demand for fossil fuels growing and supplies becoming limited, governments would indeed search for any alternative sources of energy and would try to obtain these by all means to ensure local availability of energy.

Governments are also interested in biofuels because these may offer a way that they can increase energy consumption without adding to the amount of CO₂ in the atmosphere. Crops used to produce the feedstock for biofuels production are essentially taking CO₂ out of the air. It is believed that when the biofuel is burned, the CO₂ re-released would be the same amount as that absorbed by the crop prior to its being used as input for biofuels production. If this true, there should be no net gain of CO₂

in the environment. Questions are being raised, however, about whether or not the net effect is really a zero sum outcome.

Some governments also see biofuels as a way to support the politically powerful—or politically sensitive—farm sector (depending on the country). Investing in biofuels can raise farm prices and can make those in the farm sector better off (a very much welcome development in some countries with agriculture sectors that have gained extraordinary amount of political power as compared to their size).

With all of these mixed motivations, however, it seems that the potential effects of the biofuel bandwagon on food security, on poverty and on the small producers may have been swept aside. If the world price of food rises so much or if the demand for crops for use as fuels rises high enough, the age-old concern of governments and development practitioners—food security and poverty—may become a real issue for the first time in decades. How could we have forgotten to include a serious analysis of food security and poverty in our analyses of the potentials of biofuels?

2. Overall Goal and Specific Objectives:

Against this background that is saturated with questions and uncertainties, this workshop is organized with the overall goal of discussing a systematic and research-based impact assessment initiative on biofuel development in Southeast and East Asia. More specifically, the workshop has the following more specific objectives:

- i) identify key policy issues and agendas for research,
- ii) discuss overall framework of the impact assessment proposal,
- iii) establish the regional and county assessment teams in the selected Southeast and East Asian countries who will undertake the assessment study.

The subsequent step after the workshop is the conduct of the respective country assessment of biofuels potential in Indonesia, Malaysia, Philippines, Thailand, and China. Each of these countries has vigorously pursued one or two biofuels development undertakings based on palm, coconut and jathropa for biodiesel production and on cassava, sugarcane, maize, sweet sorghum and sweet potato for ethanol production following the promulgation of their respective Biofuel Law. China and Thailand have proceeded at a more rapid pace and are now at relatively more advanced level of biofuels development than the rest of their neighboring Asian countries. Malaysia and Indonesia, the two countries together produce about 85 percent of the world's palm oil and whose production costs are about 40 percent lower than other biofuels. Major palm oil associations for the two countries have announced that they are seeking to establish a joint body to regulate international prices, fight tariff barriers in developed countries and promote palm oil as a feedstock for biofuel production. In the Philippines, laws in relation to the increasing use of coconut-blended biodiesel went into force despite various reports (from UN Energy) that raise the concerns of likely negative impacts of biofuel development on people's livelihoods and the environment, especially on the biodiversity of plants and animals. All these government laws and decrees have indeed been rapidly pushing biofuels development in all these countries, and in other countries in Asia for that matter, without due effort to assess the market and identify and enforce appropriate rules that will prevent countries from polishing up one green image at the expense of another.

3. Expected Workshop Outputs:

Based on the goal and objectives of the workshop, the following outputs are expected to be achieved:

- i) Regional prospects of biofuel initiatives (based primarily on the country prospects), a list of key policy issues, a research agenda.
- ii) A proposal on the “Effects of Emerging Biofuels on Agricultural Development, Food Security, Poverty and the Environment: with Specific Focus on Southeast Asia and China” that incorporates country inputs.
- iii) Country plans for the impact assessment study.