

Biofuel vs. Food Security

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The natural question arising from the diversion of arable land to bio-energy crops is what impact is this likely to have on food production and food security.

Not to be left behind in the current global craze about biofuels, India has begun biofuel programmes and is in the process of preparing a policy aimed at accelerating the development of the sector. The proposed policy will cover research and development, capacity building, setting up a minimum support price for *Jatropha* and other non-edible oilseeds, norms for purchases and registration for enabling biofuel use. The plan is to start with a blending proportion of 5 per cent (5 per cent biofuel with 95 per cent petroleum) by 2012, 10 per cent by 2017 and over 10 per cent after 2017.

The research focus is to improve oil content of oil seeds, increase crop yields, and reduce the environmental impact of biofuels' use. The first is significant because the *Jatropha* species being used in India, *Jatropha curcas*, is low yielding, giving one tonne of seeds per hectare under optimal conditions.

With a seed price of Rs 5 per kg, the farmer would make only Rs 5,000 per hectare per year. This makes it a loss making venture. In any case, the overall desirability and economics of biofuel has been questioned by Mark Anslow in a recent issue of the *Ecologist*. Pimentel and Patzek of Berkley have done research that shows that biofuels give out less energy when burnt than was used in their manufacture.

According to them, 6,597 kilocalories of non-renewable energy are required to produce a litre of ethanol from corn, which contains only 5,130 kilocalories of energy, which is a 22 per cent deficit.

On top of this, biofuels are more expensive than petrol. In the US, a litre of petrol costs roughly 33 cents to produce; a litre of ethanol can cost up to \$1.88. At present, this difference is covered by subsidies. Germany subsidises biofuels to the value of 47 cents per litre, and France to the value of 33 cents per litre. If these subsidies were to be removed, would biofuels become competitive? And at this pricing, would biofuels be an energy efficient option for developing countries that cannot offer equally high subsidies? And will this really make a dent in the use of petroleum-based fuels?

A research study published by the OECD (Organisation for Economic Cooperation and Development) shows that more than 70 per cent of Europe's farmland would be required for biofuel crops to account for even 10 per cent of road transport fuel! Other figures suggest that even if high yield bio-energy crops were grown on all the arable land on earth, the biofuel produced would cater to only 20 per cent of current demand.

Opening the door to GE crops?

Many commentators are of the view that the biotech lobby is using the alleged environmental bonus of crop-based agro-fuels to push the case of genetically engineered (GE) crops which are fiercely resisted as food in many parts of the world.

The leading biotechnology corporation Syngenta has applied for permission to import GE maize into Europe for processing into fuel. The particular GE maize has been engineered to express an enzyme that shortens the time it takes to ferment the feedstock into alcohol. The companies are developing a GE cassava to produce agro-fuel and large amounts of GE corn in the US are being cultivated as agro-fuel feedstock.

The genetic engineering industry is keen to use acceptance of biofuel as a strategy to speed up acceptance of GE crops in Africa, and the industry is working on a number of GM biofuel crops tailored for African conditions. Many African nations are opposed to GE crops and most have not yet developed biosafety policies. The industry is trying to push with what they think will be more acceptable energy crops rather than food crops, to prompt policy making that would open the door to other GE crops in the future.

Impact on food prices

The natural question arising from the diversion of arable land from food production to bio-energy crops, is what impact is this likely to have on food production and food security. Biofuel proponents, and there is already a vocal 'biofuel lobby', argue that bio-energy crops would only be grown on degraded or wasteland, not fertile land.

COMPARING THE BIOFUEL AGENDAS				
INDIA	EU	BRAZIL	THAILAND	CANADA
Substitution of 10% of oil requirements by 2032	By 2020, 10% of transport fuel used will be green	Biodiesel will make for 5% by 2013	Biofuel to meet 2% of its total energy needs by 2010	By 2010, 45% automotive fuel sold will 10% doping

But, if the wasteland is capable of supporting *Jatropha* cultivation, should it not be used for the cultivation of selected cereal or oil crops, or if not that, then fodder grasses? India and all of South Asia have large livestock populations, which serve as additional support for local food security. The region is deficient in fodder and all kinds of non-arable land should be diverted to fodder grasses, not crops to produce agrofuels.

The agro-fuel story shows up another dimension: the hypocrisy of the biotech lobby that does not tire of making the point that GE crops are necessary to produce more food for the growing world population, which according to them, cannot be fed from existing crop varieties. They make the case that relying on non-GE crop varieties would create food deficits and lead to forests being cleared for cultivation, to meet the burgeoning food demand. Yet the same companies think nothing of diverting limited agricultural land to produce crops, not to support food security, but to produce agro-fuel.

Critics fear that the growth of the agro-fuel sector will be detrimental to food production. The impact on food prices of diverting food crops to ethanol production is already becoming visible. Pork prices in China have begun to rise as a result of rising costs of animal feed consisting principally of corn and soybean, both crops that the US is diverting to its biofuel programmes. Less US corn and soybean on the market means higher prices for animal feed and so higher prices for meat. Beijing is slowing down China's ethanol production drive after increase in corn prices world wide prompted concern about inflation and food security at home. China is the world's number-three ethanol producer, after the US and Brazil, manufacturing 1.2 million tonnes of ethanol from corn and wheat feedstock. Chinese officials are waking up to the fact that

they will not be able to produce enough corn to supply domestic food needs and support a biofuel programme. These officials realise that they cannot buy enough corn from the world market either, with the US, the world's largest corn supplier, hoarding its corn and soybean for its own ethanol programme.

Warning signals about the consequences of the US led biofuel fad on food and feed availability are being sent by the FAO. A report prepared by the World Food Organization and the OECD predicts that the current trend will take land out of food production and increase the price of commodities such as sugar, maize and palm oils.

The report anticipates that this will lead to a rise in food prices over the next ten years. While higher food prices will be profitable for food exporting countries and large farmers, they will threaten the economies of food importing countries, the livelihoods of their farmers as well as the food available to the urban poor in these countries.

The global rush to switch from oil to energy derived from plants is being led by the rich countries who want to see energy plants grown extensively for fuel as a way to reduce their own climate changing emissions. The UN is urging governments to beware the human and environmental consequences of the agro-fuel trend, some of which could be irreversible. They warn that taking the current agro-fuel route will lead to deforestation, push small farmers off the land, and lead to serious food shortages and increased poverty. India should review its biofuel policy and examine our natural advantages to see what kinds of strategies are viable for producing supplementary energy.