

Agrofuels, Biodiversity, and Our Energy Future

Biofuels and Small Farmers

By Victor M. Quintana S. | August 29, 2007

The biofuels boom is not just another trend or a passing fashion. It is the result of a new global food and energy cycle that entails very significant adjustments in our societies.

The cycle of hydrocarbons as the almost exclusive source of energy is ending. So is the use of basic grains as a food weapon and instrument of economic subordination, initiated with the Iran-Iraq war in 1979, and the export of U.S. wheat to the Soviet Union a year later. The dominant actors of this cycle have been the industrial agriculture transnational corporations that control the international market through the policy of low prices: grain companies such as Cargill and Archer Daniels-Midland; oil companies such as Exxon-Mobil and Shell; and biotechnology firms like Monsanto and Aventis-Novartis.

Problems With the Current Situation

It has been a very aggressive cycle against small farmers and against nature. The export of subsidized grain from the United States and the European Union has led to the bankruptcy of the small growers from the countries of origin and the importing countries. Large-scale cultivation of monocrops such as soybeans in the Latin American southern cone has spread, wiping out multifunctional farms, and its technologies have contaminated millions of hectares of soil and water.

Global warming, the depletion of hydrocarbons, and the growing proportion of fossil-fuel based fuels produced in countries or organisms outside the control of the United States and the transnationals—such as Venezuela, Iran, or Russia—have led to the need for changes. New cycles for food and energy production are beginning, and among these, bioenergy plays a key role.

The bioenergy cycle is an open development cycle, whose evolution could follow several paths: it could be harnessed for restructuring domination, as the transnationals and the states that support them are attempting to do; or emerging powers could take advantage of it, such as Brazil, Russia, India, and China or OPEC; or it could be used by grassroots

organizations of rural and indigenous people, and small producers.

Millions and millions of hectares will be dedicated to the production of ethanol in the United States and in the Soviet Union, withdrawing from the international market millions of tons of corn. This will raise global prices as well as impose serious hardship on countries that have not developed food sovereignty.

The governments of the European Union and the United States are fully engaged in promoting research and the cultivation of grains, oleaginous crops, and plants from which ethanol or biodiesel can be produced. The United States earmarked US\$8.9 billion in subsidies for the production of ethanol, and research and development of biofuels in 2005. Mexican business and government are following suit and have begun to promote biofuel base crops with little or no consideration of their social, economic, and environmental impacts; without a basis in solid research regarding the conditions of our land and agricultural food production; and without analyzing the relationship in Mexico between food and biofuels production: Is it complementary? Is it mutually exclusive?

Toward a New Policy

In Mexico we cannot jump into promoting the massive, extensive, and intensive production of biofuels if we don't start from our social and historical reality, from the values that guide the project of our nation, from the social and regional diversity of our makeup, from our culture, better yet, from our multiculturalism, our biodiversity, from the wealth of our natural resources.

The following are six basic criteria that should be taken into account for the development of biofuels in our country:



- **Food Sovereignty and Security:** Mexico has 17 million people living in extreme poverty and 20 million in moderate poverty for whom corn is their main source of energy, fiber, and protein. Reducing the amount of land under cultivation for corn or allocating a large part of the crop yield to other uses will reduce supply and raise the price. This will affect first low-income families. Cultivating plants for the production of biofuels on a massive scale will increase pressure on the land currently dedicated to producing food, and make our food supply even more vulnerable. We currently depend on foreigners to provide one-fourth of our national food consumption in corn, half of wheat, more than half of rice, and almost 90% of our oilseeds. It would be totally irresponsible to dedicate large land areas to the cultivation of biofuels. It would increase scarcity of basic foods and increase vulnerability to pressures from the countries and transnational corporations that control the international market. The right to food, the basic fuel of living beings, is of a higher order than the need to fuel machines.
- **The Right of Rural and Indigenous Families to Land and to Make a Living with Dignity from Agricultural Work:** The experience of nations such as Argentina, where monocrop cultivation has been imposed by the international market, is very clear: it implies the displacement of hundreds of thousands of small and medium producers and their dislocation from the country to the city. Those who do not have the means to cultivate large farms to obtain the benefits of an economy of scale, or who don't have the resources needed to acquire specialized machinery or technology, find themselves unemployed. Farmers who go into debt to acquire these things but are then defeated by the competitiveness of big businesses also lose their livelihoods. In places where biofuel base crops are grown we find the same disadvantages as with monocrops in general. Therefore, if such crops are to be promoted in Mexico, care must be taken not to displace small producers, and rural and indigenous peoples from their land. The State and society should guarantee respect and no pressure on community, cooperative, and family land. We are not just dealing with guaranteeing property or the possession of land, but with the source of employment for family farmers.
- **Sustainability of Water:** In our country we have a serious problem with the depletion of aquifers and the overexploitation of rivers and lakes. This problem will increase according to climate change studies that predict larger droughts in the North of the country, less precipitation, reduction in the capacity of dams, and in a decrease in the replenishment of aquifers. Monocrop cultivation is based on intensive use of water. Companies interested in biofuels will not use seasonally cultivated land, but will seek out areas with irrigation because of its productivity. Except in a few regions, in Mexico the efficient use of water systems is not widespread. We have very little water in our country, and reducing that vital and primary resource in order to produce fuel threatens not just our sovereignty but also perhaps our viability as a nation. The cultivation of base plants for biofuels should always be conditioned on sustainable water management.
- **Sustainability of Natural Resources:** Our experience with the intensive cultivation of soy, oil palm, and corn show that they bring about devastation of natural resources: clear-cutting thousands of hectares of forest and shrubbery; pollution and depletion of soils through the use of agricultural chemicals; loss of biodiversity induced by monocropping; and the emission of nitrous oxide and other gases from fertilizers that contribute to the greenhouse effect. Changes in land use, for example, when converting previously uncultivated areas into crops, also contribute to global warming due to the reduction in green cover and the increased emission of carbon. Therefore, in Mexico base crops for biofuels should contribute to, not detract from, the sustainability of natural resources.
- **Avoidance of Genetically Engineered Crops:** The urgency to produce ever-increasing amounts of biofuels encourages the use of genetically engineered seeds, in the case of soy and corn; of genetically modified trees, such as the African palm and the genetically engineered poplar; or the development of genetically engineered grasses. Falling into that trap raises two threats. First, it makes us dependent on transnational corporations like Monsanto to obtain and use seed, and requires payment on patents. The second, even worse, is the attack on native seeds, grasses, trees, and entire ecosystems by the intrusion of transgenic elements that can end diversity and extinguish animal or vegetable species. We cannot allow the development of biofuels to be carried out based on genetically engineered plants and seeds.
- **Community, Local, and National Control:** In Mexico we vociferously maintain our national sovereignty over petroleum, although the communities in which oil wells are located are the last ones to benefit from oil extraction and the first to be hurt by the environmental

damage it causes. The main promoters of biofuels production are oil companies such as Shell and Exxon, chemical companies such as Monsanto and Dupont, and agribusiness companies such as Cargill. As fossil fuels have been increasingly questioned, they have repositioned themselves to control the bioenergy field. Because of that, another criterion for the production of biofuels in Mexico is that of national and community control. This means that transnationals should not appropriate the process of their production and distribution, but that it should remain under national control. However, that is still not enough, given the negative experiences suffered by communities that are “unlucky” enough to have oil resources in their territory. It is necessary that these rural communities, with help from the government, have mechanisms that allow them to develop and exercise community control over the bioenergy that they produce—they should be able to decide how to produce the energy, how much to produce, for what use, and for whom.

Most of these criteria stem from small farm and indigenous agricultural practices, uses, and customs in our country. The first aim of production is to feed the family unit and the community. In doing so, the family is provided with a source of work, within its own land and community, although given economic and social distortions in many cases this livelihood is not enough for the subsistence of the domestic unit. These practices take great care to ensure sustainability in the way water and natural resources are used. The reason is very simple: maintaining and even improving the endowment of these resources is a condition for inter-generational reproduction of the family. They almost exclusively use native seeds and plants, which are transmitted from one generation to the next, or domestic varieties that have been adapted by the family or community to the climatic, soil, and moisture conditions of their land. And finally, the fundamental decisions about what should be grown, how it should be grown, to which market it should be aimed, and under what conditions are not made outside the family unit or the community.

Responsible Use and Alternatives

It is not that we should reject biofuels in general, but we clearly reject the promotion of ethanol production based on corn and the advancement of biofuels within the logic of transnationals in Mexico. With climate change it is necessary to find energy options. But their exploration and development—if it enters into the hyper-industrial and transnational logic—will harm not just peasant families and rural

communities, but also less powerful nations. In the long run, these “solutions” will be counterproductive for the very problems they seek to address.

The path to follow entails the small-scale production of biofuels from diverse sources so as not to enter into conflict with food production nor fall into the cultivation of monocrops. Greater advantage must be taken of farm byproducts, cattle dung, and biomass generated in other processes, production must assure sustainable use of water and natural resources, and be oriented firstly to satisfying the energy needs of the local community.

This is a start, but we can’t convince ourselves that the production of alternative and sustainable energies will alone solve the problem of global warming. The entire model of civilization of our planetary society continues to revolve around industrialization and that entails a permanent and

Six Criteria for the Development of Biofuels in Mexico
<p>1) Food Sovereignty and Security: The right to food, the basic fuel of living beings, is of a higher order than the need to fuel machines.</p>
<p>2) The Right of Rural and Indigenous Families to Land and Agricultural Livelihoods: Great care must be taken not to displace small producers and rural and indigenous peoples from their land. The government and society should guarantee that there is no pressure on community, cooperative, and family land, and respect for their livelihoods.</p>
<p>3) Sustainable Water Use: The cultivation of base plants for biofuels should always be conditioned not just on availability of water but on its sustainability.</p>
<p>4) Natural Resources Sustainability: In Mexico, production of base crops for biofuels should contribute to, not detract from, the sustainability of natural resources.</p>
<p>5) Avoidance of Genetically Engineered Crops: The use of genetically modified crops to increase yields causes dependency on transnational corporations like Monsanto for seeds and leads to genetic contamination of native seed, grasses, trees, and ecosystems. We cannot allow the development of biofuels to be carried out based on genetically engineered plants and seeds.</p>
<p>6) Community, Local, and National Control Criteria: The production of biofuels in Mexico should take place under national and community control; transnational corporations should not be allowed to appropriate the process of their production and distribution. Also, rural communities, with governmental support, should have mechanisms to develop and exercise community control over the bioenergy that they produce.</p>

structural submission of the countryside to the city, and enormous consumption and waste of all types of energies. For the model of consumption exemplified by the rich countries of the north, no energy source will be sufficient. Even supposedly renewable energies like biofuels will fall short given the strain on nature that they entail.

We need to get to the bottom of the problem and question the capitalist industrial and post-industrial system that crowds people into cities of superhuman scale and voraciously consumes huge quantities of industrially produced food and energy to transport it across the planet. As the Brazilian theologian Leonardo Boff points out, *"It is not enough to adapt to the new reality, nor is it sufficient to ameliorate the harmful effects of global warming, but rather we have to delve deeper: we have to renew the meaning of life, we have to recreate a new spirituality, that is, a broader sense of our passing through this world, of our coexistence as human beings, to assure that the earth and humanity can and will continue to have a future."*

In this questioning of our civilization and the values that guide it, in this search for meaning, rural and indigenous communities have much to say: We can see now that rural people got it right strategically, we see the enormous environmental damage wreaked by industrial agriculture and livestock farms, we see the need to preserve domestic seeds and the genetic patrimony of nations.

The cycle that is now painfully beginning should not be one of genetically modified seeds and new energy sources that destroy biodiversity. It should be one of healthy food for all and diversified energy sources, administered with convivial wisdom, as Ivan Illich would say.

The crisis has provided us with the material basis for rural rebirth. Our generation and coming generations require

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plentiful and healthy food, produced without harming the environment, with the main goal of nourishing people, not making profits, without wasting water and energy, and without irresponsibly withdrawing millions of hectares from food production to use them for ethanol or biodiesel.

The only ones who can do this, who have the ancestral knowledge, the genetic inheritance, the love for the land, and the vocation of service to produce the food the world will need are rural communities. For this reason, they should be supported to become strong economic and social actors.

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