

Agrofuels in Mexico: Challenges for Food and Energy Sovereignty

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Mexico's integration into the globalization process has been a double-edged sword. On the one hand, we have achieved strong positioning for several products within the framework of trade agreements, heralded as exchange opportunities that will supposedly reinvigorate the jobs market and generate income. On the other hand, this process has introduced the massive displacement of cheap labor toward the regions where export capital is concentrated. Natural resources have been positioned as areas of investment, and many traditionally state-managed spheres have been privatized.

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Within this context, the first signs of the food crisis began to emerge at the global level in 2006. The more dependent countries have been especially affected by hikes in grain prices, and have seen increasing poverty among their populations. The causes of rising international food prices, and therefore of the food crisis, are diverse and have appeared in combination. Contributing factors include the increase in energy costs and fertilizers linked to oil prices, more land allotted to cultivating the raw materials for biofuel production,

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decreased agricultural production due to climate factors, increased demand for food from countries such as China and India, low food reserves, and financial speculation.

The debate on the causes of the food crisis is sharpest with regard to production of biofuels and speculative use of financial capital, both in the agricultural and oil markets. The advent of the so-called “biofuels” (hereafter referred to here as agrofuels)¹ in the global market has profound implications for the energy and agri-food sectors. One of the more salient explanations for the rising food prices in recent years is the increased demand for certain agricultural products used in the production of agrofuels, especially corn, a raw material in the production of ethanol, and rapeseed, or canola (*brassica napus*), for the production of agri-diesel.

With the argument that it will boost employment in impoverished rural areas and improve peasant farmers’ living conditions, Mexico has responded by increasing grain imports and promoting the production of agrofuels; however, both decisions are linked to the processes of economic integration advocated by developed nations and not to a strategy that favors food sovereignty or security.

Even though the first agrofuels have been produced using agricultural crops, a second generation is expected to be obtained from lignocellulosic residues. The technology for the second group is not yet available and will be much more expensive; meanwhile, ethanol and biodiesel, produced from agricultural crops, suit existing engines and are proving to be a profitable business.

Proponents of agrofuels argue that they help reduce climate change because they will reduce the amount of greenhouse gases produced by fossil fuels; unfortunately, the energy balance is unfavorable.

It has been calculated that in a scenario in which 25 percent of transportation fuel comes from biofuels, the increase in fertilizers would be 40 percent, and so the savings in greenhouse gases through the use of ethanol in transportation would be eclipsed by [the volume of] gases generated by the nitrogenized

fertilizers released into the atmosphere. The environmental efficiency of biofuels is questionable, because rapeseed and ethanol release between 50 and 70 percent more gases into the atmosphere.²

In addition, they promote more deforestation and there are indications that one ton of palm oil produces 33 tons of CO₂—10 times more than oil.

The expansion of agrofuels represents a new form of colonial exploitation, in which the natural resources of peripheral countries are extracted to satisfy the energy requirements of the central countries and local elites. The underlying objective is to shift the intensification of agrofuels toward other nations by transferring technology and financial resources, together with the social and environmental costs of the activity.

The production of these new fuels threatens many countries’ food security and sovereignty because of the displacement of areas traditionally reserved for cultivating basic crops. In this sense, in recent years Mexico’s food dependency on the United States has increased. Since 2007, the U.S. has become the largest agrofuel producer in the world, earmarking large quantities of corn for ethanol production and causing grain prices to increase. In Mexico, this situation is reflected, among other things, in the increase of the price of the tortilla, a basic foodstuff, by more than 100 percent in just four years.

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In terms of energy, oil has become the apple of discord. Wars are fought in the unrestrained drive to obtain it, and for many nations it has become the symbol of the omnipresent control of U.S. foreign policy. Modern world history may be written around oil disputes. The most recent setbacks in the global economy are related to the prices of fossil fuels and financial speculation. Its influence has generated profound processes of economic restructuring that have negatively impacted on the poorest countries.

The energy crisis, caused by patterns of unsustainable consumption, the progressive exhaustion of fossil fuels, and the resulting price increase and speculation around oil, has caused the United States and Europe to reorganize their energy supply policies, substituting fossil fuels for so-called “renewable energy,” including agrofuels. Along with a series of tax programs to stimulate its production, both the United States and

the European Union (EU) have accelerated the global production of these apparently “green” energy sources to meet their pressing need to reduce their oil dependency in the medium term.

In the case of the United States, in 2007 a strategy was introduced and promoted to reduce gasoline consumption by 20 percent in 10 years, thus reducing its oil dependency on Venezuela and the Middle East. Europe set a goal in 2006 of producing at least 20 percent of its energy from renewable sources and, of this, 10 percent from agrofuels.³

International prices of a barrel of oil have varied widely, with a tendency to increase in recent years. In response, Mexico reduced its export volume and continues to import gasoline. This is especially serious for the country, almost totally dependent on oil revenues. Amidst heated debate, agrofuel production has already begun in Mexico. The problem of producing it from corn has important implications, because this grain is the population’s main food source. The production deficit has led us to depend on importing 40 percent of our requirements.

In June 2007, Felipe Calderón inaugurated the country’s first ethanol plant, owned by the Mexican company Destilmex, which was to begin operations in May 2008 and would consume 290 000 tons of white corn to produce 30 million gallons of ethanol for export to the United States. In 2007 another plant was built in Los Mochis, Sinaloa, by Mex Starch, with a capacity for processing 50 000 tons of corn. Plans existed to process 150 000 tons of the grain in another plant in Guamúchil, also in the state of Sinaloa. So far, these plants are on hold, not precisely due to public opposition, but because of the bureaucratic procedures related to obtaining government loans. In any case, it appears that the criticisms have had some impact, because recent plans indicate that the agrofuel production will be based on sorghum, not corn. This may appear to be a solution; but in order to produce agrofuels for export to the United States, agricultural land will be used that could otherwise have been allotted to food production.

Projects are also being promoted to produce biodiesel from African palm, jatropha, and castor beans in the country’s Southeast. In the state of Chiapas, one of the main producers of these crops, the state government has been promoting its production by supposedly ensuring that basic crops are not displaced; however, the prospect of reconverting perennial crops sooner or later has removed the incentive to produce food for self-consumption.

The jatropha project has been promoted by the National Forestry Commission (Conafor). The main argument is that

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it will foster the recovery of deforested or “marginal” land, and so the peasant farmers who entered the program from 2009 received Mex\$7 400 pesos per hectare from Conafor, as well as the seeds or plants.⁴ The program’s incentives accelerated the reconversion of important areas that had been used for corn, even given the context of high corn prices. Thus, peasants in Chiapas began to suffer a double dependency: toward the private jatropha market as well as the purchase of food at high prices.

To date, one plant exists that uses jatropha to produce biodiesel in Puerto Chiapas; however, it is not in operation, apparently because the technology to produce the fuel is not yet available. The vegetable oil obtained is allotted to the baking industry; the raw material is sent to the Bimbo-Marinela plant in Guadalajara.

What has not halted is the expansion of surface area sown with African oil palm in Mexico’s Southeast. Between 1995 and 2001 the surface devoted to this crop increased by more than 1 000 percent, while production increased by 213 percent. Paradoxically, Mexico is an importer of palm oil, occupying twenty-seventh place among the 171 countries that imported more than US\$50 million worth in 2001.⁵

There are nine palm oil extraction plants in the four southeastern states, six of which are located in Chiapas. Seven are private, only one is a capital stock company, and one is mixed capital. Even though many of the plantations have reached a productive age, the extractors continue working at only 50-percent capacity, far below their installed capacity.

Mexico’s vulnerability is quite evident both in terms of food and energy. In the first area, it will be difficult to recover its food sovereignty in the short term, and in the second, even though it continues to be an oil producer, the extraction costs and its technological and financial dependence place production in a difficult situation, attenuated by rising price trends in the energy market. In addition, the country is responding slowly compared to other competitors in producing alternative forms of energy, among which we may include agrofuels, not to mention Mexico’s potential in solar

energy production and the need to seek out other sustainable energy sources.

Today, thousands of Mexican peasants preserve their land and their ties to it. Their deeply-rooted culture and their way of thinking mean that the production of approximately 60 percent of our food is still in their hands. In this sense, promoting agrofuels in Mexico threatens our food sovereignty. ■■

NOTES

¹ In this essay we use the term “agrofuels” because, although it is now technologically feasible to obtain energy from different sources of biomass, these new fuels (basically ethanol and biodiesel) are obtained from

agricultural crops. The term “agrofuels” carries an implicit criticism, because the term “biofuels” lends a “green” tinge of non-contaminating renewable energy to a new form of agricultural capitalism.

² Rosa Luz González and Michelle Chauvet, “Biocombustibles y cultivos farmacéuticos: ¿oportunidades o amenazas?” *El Cotidiano* no.147, Eón/UAM Azcapotzalco, 2008, pp. 51-61.

³ Alberto Alonso Fradejas, “Agrocombustibles, derecho humano a la alimentación y soberanía alimentaria: un triángulo dialéctico de poderes,” *Territorios* (Guatemala: Institute of Agricultural and Rural Studies, CONCOOP, 2007), <http://www.soberaniaalimentaria.com/textos/AgrocombustiblesAlimentosGuatemala.pdf>.

⁴ “La Jornada del Campo,” supplement to *La Jornada* (Mexico City), April 16, 2011.

⁵ Pablo Castro, “La palma africana en México. Los monocultivos desastrosos,” *Eco Portal.net*, www.ecoportal.net/Temas_especiales, June 15, 2009, accessed August 2011.

Biofuels, a Chance For Energy Self-Sufficiency In Mexico’s Countryside

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Biofuels, part of the renewable energy sector, are combustible liquids such as ethanol and biodiesel produced from biomass, that is, from organic matter. Among their advantages are their ability to reduce energy dependence on fossil fuels, which helps reduce CO₂ emissions and other greenhouse gases, and the creation of high value-added sub-products for various industries, while representing a revolution in the energy, productive, commercial, and rural sectors.

A wide variety of raw materials are used in their preparation, such as agricultural crops, wood, or cane and seeds. They can also be produced from beets, fruit, rice, and even

from used oil and solid fats, as well as from lingo-cellulosic material and pyrolysis oil used in more advanced processes.¹ Biofuel production should also be accompanied by the cultivation of high energy-yielding crops, and at the same time require fewer inputs.

Renewable resource such as biomass, however, are put at risk by improper use; therefore caution should be exercised in the production of this type of energy on a large scale, since production cycles may have harmful effects on the environment due to deforestation and encroachment on nature reserves. Thus, biofuel production should be carried out in a sustainable, controlled, local way on a small and medium scale, so that the insertion of small and medium producers into the biofuel production energy chain contributes to revitalizing and promoting self-sufficiency in rural areas. Mexico

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