

the oil they contain and its conversion into biodiesel. It is also important to mention that the price of some of the crops with potential for processing into biofuels has risen, and this could increase farmers' revenues.<sup>11</sup> **NM**

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#### FURTHER READING

Sánchez Cano, Julieta Evangelina, "Biocombustibles, la era de la nueva revolución agrícola," *Casa del tiempo* nos. 22-23, vol. 2 (Mexico City: Universidad Autónoma Metropolitana, August-September 2009), pp. 79-84.

#### NOTES

<sup>1</sup> Wood consists of lignin, cellulose, and hemicellulose. "Ligno-cellulosic" refers to the processes that combine lignin and cellulose, for example those in which both substances are decomposed. "Pyrolysis" is the process of decomposition of organic matter by heating in an atmosphere devoid of oxygen. It is a method for converting biomass into biodiesel.

<sup>2</sup> J. Reichman, "Biomasa y agro-combustibles: veinte tesis," *Ecología política* no. 34 (Barcelona: Icaria, 2007).

<sup>3</sup> Tomas Loewy, "Indicadores sociales de las unidades productivas para el desarrollo rural en Argentina," 2006, [http://www.infoagro.com/desarrollo/indicadores\\_sociales\\_desarrollo\\_rural\\_argentina.htm](http://www.infoagro.com/desarrollo/indicadores_sociales_desarrollo_rural_argentina.htm).

<sup>4</sup> Ibid.

<sup>5</sup> By "energy matrix" I mean the range of energy sources used by a country as a whole.

<sup>6</sup> Government of Brazil, *Plano nacional de agroenergia, 2006-2011* (Brasília, F.D.: Ministério da Agricultura, Pecuária e Abastecimento-Secretaria de Produção e Agroenergia, Embrapa Informação Tecnológica, 2006), 2nd revised ed.

<sup>7</sup> Food and Agriculture Organization, "Land resource potential and constraints at regional and country levels," based on the work of A. J. Bot, F.O. Nachtergaele, and A. Young, Rome, FAO, UN, Land and Water Development Division, 2000, <ftp://ftp.fao.org/agl/agll/docs/wsr.pdf>.

<sup>8</sup> Secretaría de Energía et al., "Potenciales y viabilidad del uso de bioetanol y biodiesel para el transporte en México (Proyectos ME-T1007-ATN/DO-9375-ME y PN 04.2148.7-001.00)," November 2006, [http://www.sener.gob.mx/res/169/Biocombustibles\\_en\\_Mexico\\_Estudio\\_Completo.pdf](http://www.sener.gob.mx/res/169/Biocombustibles_en_Mexico_Estudio_Completo.pdf).

<sup>9</sup> At the exchange rate of Mex\$10.9694, published in the *Diario oficial de la federación*, Monday, May 8, 2006, [ftp://ftp2.sat.gob.mx/asistencia\\_servicio\\_ftp/publicaciones/legislacion06/tc20060508.doc](ftp://ftp2.sat.gob.mx/asistencia_servicio_ftp/publicaciones/legislacion06/tc20060508.doc).

<sup>10</sup> Secretaría de Energía et al., op. cit.

<sup>11</sup> Omar Masera, "La energía renovable como catalizador del desarrollo sustentable en México," working paper (Mexico City: UNAM, August 17, 2007), [http://www.snitt.org.mx/pdfs/bioenergeticos/Perspectivas\\_Bioenergia\\_Mexico.pdf](http://www.snitt.org.mx/pdfs/bioenergeticos/Perspectivas_Bioenergia_Mexico.pdf).

<http://pictures.reuters.com/TR3Doc/RTR/Media/TR3/S/W/L/Y/RTR2UQE1.jpg>

# Agrofuel Plantations in Chiapas And Their Socio-Environmental Impact

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The state governor of Chiapas, Juan Sabines, has championed the growth of agrofuel plantations (controversially dubbed "*biocombustibles*," or biofuels, by his administration) ever since he took office in December 2006. The African oil palm tree (*Elaeis guineensis*) and the jatrop

pha are particular favorites and are showcased as "the great Chiapanecan contribution to the fight against climate change." His first decree, issued on his first day as governor, was to create the Chiapas State Bio-energy Commission, later renamed the Bio-energy Institute, and now called the Institute for Productive Reconversion and Biofuels.

This decree declares that the state has a potential 900 000 hectares suitable for African oil palm plantations, mainly in the northern and southern sections of the Lacandon Jungle

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Chiapas has five African oil palm nurseries, around a million and a half plants distributed to indigenous and peasant communities, who receive them as “presents” in return for providing their land and labor.

and in the Soconusco Coast region. The official target for the 2006 and 2012 period was to increase the African oil palm plantation area from 17 000 to 100 000 hectares, 60 000 hectares in the jungle region and 40 000 in the Soconusco. Additionally, the plan was to plant 110 000 hectares of jatropha in the low-lying subtropical jungle regions: the Isthmus, Fraylesca and Central Valley.

In fact, with this project, the Chiapas government found an echo in Felipe Calderón’s federal government: “biofuel” plantations became one of the five key project areas of the Mesoamerican Project for Integration and Development (or simply known as the Mesoamerican Project), a recycled and pared down version of the famous but deflated Puebla-Panama Plan, the PPP).

In Chiapas, some 45 000 hectares are now planted with African oil palm trees, making it the state with the largest plantation area for this crop and the country’s biggest producer of

this type of oil, followed by Veracruz and Tabasco. We should mention that these single-crop plantations of exotic species—not from the region or even the country—are located at the edges of highly biodiverse regions that have been declared protected natural areas, such as the biosphere reserves of Montes Azules, Lacantún, la Encrucijada, and El Triunfo; the natural monuments of Bonampak and Yaxchilán; the Palenque National Park and the Chan Kin, Nahá, and Metzabok flora and fauna sanctuaries, all traditionally populated by indigenous communities.

Chiapas now has five African oil palm nurseries, the largest in Latin America, located in Soconusco-Coastal, North Jungle, and South Lacandon Jungle regions. According to official reports, they contain around a million and a half plants that are being distributed to indigenous and peasant communities, who receive them as “presents” in return for providing their land and labor.

The design of the production process of these agrofuels deprives peasants of control over any stage of the process; instead they depend on technicians from private and government institutions, and once the product is ready for sale they are in the hands of greedy intermediaries. In the best case scenario, producers are obliged to hand over the bunches

of fruit to a captive market controlled regionally by each of the oil-extracting companies, amounting to a quasi-feudal system.

That said, it has to be added that most Chiapas peasant producers of African palm trees are currently pleased with the high demand and “good prices” for their product, especially in comparison to the depressed and dire prevailing situation of the prices and market conditions for basic grains such as maize and beans.

Mexico has 11 palm oil extraction factories, 8 of which are in Chiapas; one, set up in Puerto Chiapas with consultancy services and co-financing provided by the government of Colombia, can produce so-called “biodiesel.” The companies control the entire production process, from the extraction of the palm oil to its eventual sale in a market monopolized by the food and cosmetics industry and in which there is a palm oil deficit of over 80 percent, thus requiring the oil to be imported from Central America to make up for the shortfall.

This industrial deficit creates a strong demand, triggering explosive expansion of these plantations in Chiapas and leading some of the oil production companies to buy or rent, on unfair terms, large swathes of *ejidal* collectively-owned land on which to grow this monoculture crop; they can do this by taking advantage of the government’s Official Program to Sub-Divide and Deed Collectively-Owned Land (Procede).

The jatropha, meanwhile, is an endemic jungle shrub from Chiapas and Central America, traditionally used by the indigenous and peasants of Chiapas as living fences to demarcate pasturelands and plots of farmland, as well as for medicinal purposes. It was also included in the official mega-expansion plans as a commercial crop, to be used exclusively for creating “biofuels.” Juan Sabines’s government therefore set itself a goal of pharaonic proportions: planting 110 000 hectares, for which his government imported from India thousands of tons of jatropha seed. The plan failed utterly because these seeds did not germinate properly and only around one percent of the entire planted area survived.

In response, the state government decided to launch an aggressive program of collecting cuttings of native jatropha to set up central tree nurseries, mainly located in the Isthmus-Central Valley and Fraylesca regions. From there, the government is only just starting to collect and distribute cuttings among neighboring communities to create plantations through propagation. At the same time, and with great fanfare, a pine-nut oil and “biodiesel” processing plant was inaugurated in the city of Cintalapa, Chiapas, but has now been abandoned due to a complete lack of raw material.

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Any boasting in Mexico and abroad about the state of Chiapas’s extensive production of “biodiesel” and “jet biofuel” is actually the government making demagogic, fraudulent noises: today the state does not produce a single liter of these fuels on a commercial basis. There is, however, an accelerated and brutal expansion of these harmful single-crop plantations, especially of the African oil palm that is in so much demand from the food industry. But these crops cannot be described as biofuels at all; instead, they cause serious and irreversible socio-environmental damage because they entail the deforestation of areas with high biodiversity of native plants known in Mexico’s southeast as *acahuales*, jungles in the process of regeneration. Similarly, the peasants’ land, now being used to produce basic grains in the traditional, environmentally-friendly poly-cultivation, is replaced by them and by pastureland to be used for cattle to produce meat for human consumption, further damaging the already diminished local, regional, and national food sovereignty.

Furthermore, vast quantities of pesticides have been applied indiscriminately to achieve a rapid and high level of productivity. These contaminate soils and water and seriously harm the health of peasant families, while also deepening local communities’ economic dependence on an international market that is increasingly monopolized, thus increasing inequality and poverty in the medium term. And finally, in the specific case of the African oil palm, there is the real risk of creating in the long term a process of genetic contamination and alteration of natural systems in regions of very high biodiversity such as the Lacandon jungle and the Soconusco. And this is all in the service of indefinitely replicating an unsustainable, consumerist, globalized model of urban industrial development, tendentiously manipulating public opinion by talking of plantations that in fact have nothing biological or ecological about them, solely in order to maintain the waste of energy of economically powerful countries, companies, and sectors that are ultimately those that have led humanity down the cul-de-sac of global warming. ■■■