The Agro-industrial Food Chain: Global Warming, Food Crisis and Transgenic Corn

Like a serpent biting its own tail, the industrial food system—arguably the main cause of global climate change—was shaken by an incredibly poor harvest in the Summer of 2012, after an intense drought in the United States. Although harvesting was affected in some regions, many crops were unusable because the lack of water meant plants were unable to process synthetic fertilizers and thus became toxic and inedible. In the case of corn, food shortages were exacerbated because 40 percent of the corn produced in the United States is destined for ethanol production, feeding cars instead of cereal production in the world is used for the factory farming of confined animals. This is another of the absurdities of the agroindustry; it would be much more efficient to use cereals for human consumption, consume less meat, reduce the scale of animal farming, and feed animals through foraging. The confined industrial breeding of animals is the source of both food shortages and price increases, as well as epidemics such as avian and swine flu; these factors often exacerbate one another, as we have seen in Mexico, where a recent avian flu outbreak led to a spike in the cost of eggs. These are just a few symptoms of the transnational corporate food industry, which is also characterized by a lack of biodiversity, the heavy use of pesticides and synthetic fertilizers, and a dependency on fossil fuels.

Thus the two most significant planetary crises, the food crisis and the climate crisis, have the agro-industrial food production system as their main cause: from seeds and agriculture to livestock production and supermarkets, industry forms a chain that oppresses people and exploits countries—with Monsanto pulling firmly from one end and Walmart from the other.

The role that the industrial food chain plays in causing climate chaos is fundamental, but this reality is very different from the “facts” that corporate propaganda bombards us with. Most official studies, from the Stern Report in the UK to the Intergovernmental Panel on Climate Change (IPCC), place industrial agriculture, heavy use of pesticides and synthetic fertilizers, also characterized by a lack of biodiversity, the transnational corporate food industry, which is also characterized by a lack of biodiversity, the heavy use of pesticides and synthetic fertilizers, and a dependency on fossil fuels.

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that ends up in dumpsters. This means that deforestation; 15–20 percent from emissions from agriculture; another 15–18 percent of total greenhouse gas system is responsible for the aforementioned scandalously, those who much more drastically than at the beginning of the supply chain. Scandalously, those who suffer the most from the rise of food prices are the poor, especially the urban poor, who spend 60 percent of their income in order to eat. In Mexico, the case of maize is illustrative of the problem. After the harvest of 2012, farmers in the north of the country had 2 million tons of unsold maize, yet 1.5 tons of transgenic maize were approved in the US. At the same time Mexico sold 150 thousand tons of maize to El Salvador, and the same amount to Venezuela. Shortly before that, Mexico had bought half a million tons from South Africa. Such wide-ranging transportation of food across the planet is not only unnecessary and devastating for national production, but it is also absurd considering climate change. Bruno Ferrari García de Alba, the Mexican Minister of the Economy (2006–2012) who worked for Monsanto before becoming a government official, washed his hands of the situation, stating that the decisions were made by private companies, not the government.

As researcher Ana de Ita from the CECCAM (Centro de Estudios para el Campo Mexicano or Center for Studies of Mexican Rural Areas) explains, what makes this possible is the liberalization of national farming production, which preceded the ratification of NAFTA, when the parasitall company CONASUPO (Compañía Nacional de Subsistencias Populares or National Company for Popular Subsistence) control seeds, livestock genetics, pesticides, the distribution and storage of grains, food and beverage processing and distribution, as well as supermarkets. They are responsible for the crisis, yet they have shielded themselves against its effects by shifting financial losses to small producers, consumers, and public coffers. For them, climate chaos and food shortages do not produce losses but profits, as it is the case in their ongoing sale of seeds, pesticides, and fertilizers, or in the case of corporations that store cereals, hoarding them and speculating on their commodity futures, or products in supermarkets, where prices rise much more drastically than at the beginning of the supply chain. Scandalously, those who must be imported or produced transgenically because national production is not enough. Mexico, however, has produced about 22 million tons annually in recent years, while human consumption in the country is only about 11 million tons. Industrial derivatives use an extra four million tons, leaving 7 million. But corporations import an additional 8–9 million tons because 16 million tons are used for the mass industrial rearing of poultry and pigs—an industry heavily dominated by large corporations. If rearing were decentralized and animals fed using a diversity of means, nationally produced maize would be more than enough. Additionally, this would reduce the risk of epidemics and eliminate transgenic corn, creating many more rural jobs. Importing maize to Mexico is completely unnecessary for Mexico’s population; it is simply a function of transnational companies wanting to increase their profits, an activity promoted and subsidized by the government. If public policies instead protected the diversity of agricultural and livestock production, small-scale farmers, local producers, and national seeds and breeds, food security and climatic risks would be diminished. We would have enough food—at accessible prices and of much higher quality.

An extremely concerning consequence of the dismantling of the national production of maize in Mexico is that companies want to replace local varieties with transgenic corn, which would have a devastating economic effect on small farmers (Cargill, ADM, Monsanto are the origin of maize, one of the three main food crops worldwide. If transgenic corn were to be allowed in Mexico, the global genetic repository of maize would be irrevocably impoverished. It would be an historic crime against global food security, as well as against the rights of the indigenous communities and peasants who produce the crop. In March 2011, the Network for the Defense of Maize (comprised of over 1,000 indigenous communities and peasants, along with civil organizations from across the country) assembled to denounce the transgenic contamination of maize. The assembly reaffirmed its rejection of the planting of transgenic maize, and called attention to the latest abuse of power the government had authorized Monsanto at “pilot” trial plot of transgenic corn in the State of Tamaulipas. It was planted only in a quarter of a hectare, which proved how prudent the government was, according to the SAGARPA (Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación, or Ministry of Agriculture, Livestock, Rural Development, Fisheries and_Growth). For the contrary, the opposite turned out to be the case, as so-called pilot trials exist merely to disguise the pre-determined slippery slope eventually allowing monopolizations to plant transgenic corn at a commercial scale and thus pollute Mexico with impunity. The stages to be reached in order to gain approval to make plantations of transgenic corn at a commercial scale imply a first “experimental phase,” followed by a “pilot phase” in which, harvested corn can be sold. Once this phase is completed, large-scale commercial production would be allowed. According to the Mexican Biosafety Law, between each phase, an evaluation must be carried out to decide whether the planting of a new crop is allowed to continue or not. But corporate evaluations are carried by the same corporations that apply for transgenic maize plantations, and neither the criteria used for these evaluations nor the results from the trials are publicly disclosed by the government. In other words, there is no real biosafety protocol in place that can protect the national maize from contaminating the country. Other so-called “experimental” and “pilot” trials phases are mere formalities which lead directly to commercial, large-scale planting. Furthermore, even if companies were legally obliged to apply biosafety rules, farmers would necessarily apply them in the field, as industrial farmers would see them only as extra expenses. Indeed, After this first “pilot” planting, dozens of others were approved. In late 2012, Monsanto, DuPont, and Dow Agrosciences applied for the commercial plantation of transgenic maize in Mexico in millions of hectares. Thanks to strong widespread national and international protests, the approval of commercial scale transgenic maize production has not been approved, but...
intense pressure from companies continues. What is at stake in Mexico is the heritage of millions of peasants and members of indigenous communities who have helped define the whole of humankind, and the genetic diversity of the food industry in Mexico. It appears that subsequent governments have regards these as picturesque facts addressed only to tourists. To protect native corn necessarily implies recognition and respect, on its own terms, of the integral rights of indigenous and peasant peoples. In order to avoid transgenic contamination of the original locus of maize production, a good start would be the immediate ban of transgenic crops throughout the country.

Currently, many alternatives exist to the agro-industrial food system; exiting the agro-industrial food system; strengthening peasant food networks, the culturally diverse and decentralized production of crop (without pesticides), and their consumption in local markets. Only in this way can we begin to reconstruct Mexican soil—the destruction of which hinders carbon absorption and exacerbates global climate change— and seriously work towards improving life on this planet.

Notes
This article was sourced from the following:
Silvia Ribeiro, “Comida que calienta,” La Jornada, 8 September 2012;
Silvia Ribeiro, “Comer o no comer,” La Jornada, 25 August 2, 2012;


2 See ETC Group,”“Who will Feed Us? The Industrial Food Chain or the Peasant Food Web” 7 September 2013, http://www.etcg.org/content/poster-who-will-feed-us-industrial-food-chains-or-peasant-food-webs.


Carolyn Deuschle and Lauren Elachi

Landrace: Zea Mays and the NAFTA Landscape

The cultivation of maize (Zea mays), or corn, has defined the lifestyle, legacy, and landscape of the Mexican territory for thousands of years. But after NAFTA passed in 1994, corn from the United States—genetically modified, mechanically produced, and heavily subsidized—began to flood Mexico’s markets and the country’s maize agricultural system was gradually dismantled. Mexican producers simply could not compete with cheap American corn. Today, a small number of large-scale farms in the lowlands dominates the export agricultural economy, leaving millions of small-scale mestizo and indigenous farmers jobless, unable to compete in an economy ravaged by trade liberalization. Perhaps more than any other land-intensive operation, corn cultivation in Mexico embodies the ecological, cultural, and economic fallout of the polarized, NAFTA-generated landscape.

Domesticated over 9,000 years ago in the Balsas River drainage in the Mexican state of Guerrero, corn evolved from teosinte (Zea), an tall, annual grass, through the natural and artificial selection and cultivation of its key mutations—rows of kernels rotating along a central axis (i.e., cob), a sealed seed head (i.e., husk), and high nutrient content. Milpa, chinampa, and other symbiotic agricultural systems were developed in tandem by indigenous farmers, whose breeding practices propelled at least 59 landraces adapted for climatic and altitudinal conditions from 0 to 2700 metres above sea level. Today, over 95 percent of arable land in Mexico is used for the production of corn, and of this approximately 75 percent is produced by indigenous or local farmers. Over 90 percent of corn producers are classified as small-scale farmers, with plots on average of 2.5 hectares or less, and which do not produce a yield large enough to export to market. Because the corn crop of most farms doesn’t make it to market, policy makers in Mexico and the United States predicted that NAFTA would not greatly affect the corn production sector in Mexico, but rather enhance it—resulting in benefits for the consumer. In reality, exports from the United States tripled from the institution of NAFTA through 2008, while prices in Mexico were cut in half for the sale of corn, despite steady gross production at a national scale.

Mexico’s preference for small-scale farming can be traced back to the 1917 institution of ejido land tenure, which returned property that had been appropriated by large haciendas to the hands of peasant communities and allowed for farming under collective ownership, or the individual use the land in usufruct. Ejidos was nullified through the revocation of Article 27 of the Mexican Constitution in 1992, allowing for foreign companies to buy land within the country. Not only did this set the stage for NAFTA, but it also signalled a change within the Mexican agricultural mindset, which had largely privileged the communal negotiation and tending of land since the Mexican Revolution. This change in regulations had major social implications, as well as impacts on the ground throughout the country. Before the privatization of land after NAFTA, only 16 percent had formalized irrigation structures in place, and the majority of arable land within the country was still being cultivated under the ejido system—encompassing 28,000 different communities and plots of land. [See Fig. 1]

The increase in corn demand and new irrigation techniques that allow for expanded production have shaped the post-NAFTA... and the NAFTA Landscape