

Poisoned and Marginalised? The Role of Agroecology in Resisting the Corporate Stranglehold on Food and Agriculture

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It is becoming increasingly apparent that food and agriculture across the world is in crisis. Food is becoming denutritified, unhealthy and poisoned with chemicals and diets are becoming less diverse. There is a loss of plant and insect diversity, which threatens food security, soils are being degraded, water tables polluted and depleted and smallholder farmers, so vital to global food production, are being squeezed off their land and out of farming. A minority of the global population has access to so much food that it can afford to waste much of it, while food poverty and inequality have become a fact of life for hundreds of millions.

This crisis stems from food and agriculture being wedded to power structures that serve the interests of the powerful agribusiness corporations in the Western countries, especially the US. Over the last 60 years or so, Washington's plan has been to restructure indigenous agriculture across the world. And this plan has been geopolitical in nature: subjugating nations by getting them to rely more on US imports rather than grow less of their own food. What happened in Mexico under the banner of 'free trade' is outlined further on in this article.

Agriculture and food production and distribution have become globalised and tied to an international system of trade based on export-oriented mono-cropping, commodity production for the international market, indebtedness to international financial institutions (IMF/World Bank) and the need for nations to boost foreign exchange (US dollar) reserves to repay debt (which neatly boosts demand for the dollar, the lynch pin of US global dominance). This has resulted in food surplus and food deficit areas, of which the latter have become dependent on (US) agricultural imports and strings-attached aid. Food deficits in the global South mirror food surpluses in the West.

Whether through IMF-World Bank structural adjustment programmes related to debt repayment, as occurred [in Africa](#), bilateral trade agreements like NAFTA and its impact [on Mexico](#) or, more generally, [deregulated global trade rules](#), the outcome has been similar: the devastation of traditional, indigenous agriculture.

Integral to all of this has been the imposition of the green revolution. Farmers were encouraged to purchase seeds from corporations that were dependent on petrochemical fertilisers and pesticides to boost yields. They required loans to purchase these corporate inputs and governments borrowed to finance irrigation and dam building projects for what was a water-intensive model.

While the green revolution was sold to governments and farmers on the basis it would

increase productivity and earnings and would be more efficient, we are now in a position to see that it served to incorporate nations and farmers into a system of international capitalism based on dependency, [deregulated and manipulated](#) commodity markets, unfair subsidies and inherent food insecurity.

As part of a wider 'development' plan for the global South, millions of farmers have been forced out of agriculture to become cheap factory labour (for outsourced units from the West) or, [as is increasingly the case](#), unemployed or underemployed slum dwellers. And many of those who remain in agriculture find themselves being steadily squeezed out as farming becomes increasingly financially non-viable due to falling incomes, the impact cheap subsidised imports and policies [deliberately designed](#) to run down smallholder agriculture.

Aside from the geopolitical shift in favour of the Western nations resulting from the [programmed destruction](#) of traditional agriculture, the corporate-controlled, chemical-laden green revolution has adversely impacted the nature of food, soil, human health and the environment. Sold on the promise of increased yields, this has been [overstated](#). And the often stated 'humanitarian' intent and outcome ('millions of lives saved') has had [more to do with PR](#) rather than the reality of cold commercial interest.

Moreover, if internationally farmers found themselves beholden to a US centric system of trade and agriculture, at home they were also having to cater to the needs of a distant and expanding urban population whose food needs were different to local rural-based communities. In addition to a focus on export oriented farming, crops were being grown for the urban market, regardless of farmers' needs or the dietary requirements of local rural markets.

Impacts of the green revolution on the farm

In an [open letter](#) written in 2006 to policy makers in India, farmer and campaigner Bhaskar Save summarised some of the impacts of green revolution farming in India. He argued that the actual reason for pushing the green revolution was the much narrower goal of increasing marketable surplus of a few relatively less perishable cereals to fuel the urban-industrial expansion favoured by the government and a few industries at the expense of a more diverse and nutrient-sufficient agriculture, which rural folk – who make up the bulk of India's population – had long benefited from.

Before, Indian farmers had been largely self-sufficient and even produced surpluses, though generally smaller quantities of many more items. These, particularly perishables, were tougher to supply urban markets. And so the nation's farmers were steered to grow chemically cultivated monocultures of a few cash-crops like wheat, rice, or sugar, rather than their traditional polycultures that needed no purchased inputs.

Tall, indigenous varieties of grain provided more biomass, shaded the soil from the sun and protected against its erosion under heavy monsoon rains, but these were replaced with dwarf varieties, which led to more vigorous growth of weeds and were able to compete successfully with the new stunted crops for sunlight. As a result, the farmer had to spend more labour and money in weeding, or spraying herbicides. Moreover, straw growth with the dwarf grain crops fell and much less organic matter was locally available to recycle the fertility of the soil, leading to an artificial need for externally procured inputs. Inevitably, the farmers resorted to use more chemicals and soil degradation and erosion set in.

The exotic varieties, grown with chemical fertilisers, were more susceptible to 'pests and diseases', leading to yet more chemicals being poured. But the attacked insect species developed resistance and reproduced prolifically. Their predators – spiders, frogs, etc. – that fed on these insects and controlled their populations were exterminated. So were many beneficial species like the earthworms and bees.

Save noted that India, next to South America, receives the highest rainfall in the world. Where thick vegetation covers the ground, the soil is alive and porous and at least half of the rain is soaked and stored in the soil and sub-soil strata. A good amount then percolates deeper to recharge aquifers or groundwater tables. The living soil and its underlying aquifers thus serve as gigantic, ready-made reservoirs. Half a century ago, most parts of India had enough fresh water all year round, long after the rains had stopped and gone. But clear the forests, and the capacity of the earth to soak the rain, drops drastically. Streams and wells run dry.

While the recharge of groundwater has greatly reduced, its extraction has been mounting. India is presently mining over 20 times more groundwater each day than it did in 1950. But most of India's people – living on hand-drawn or hand-pumped water in villages, and practising only rain-fed farming – continue to use the same amount of ground water per person, as they did generations ago.

More than 80% of India's water consumption is for irrigation, with the largest share hogged by chemically cultivated cash crops. For example, one acre of chemically grown sugarcane requires as much water as would suffice 25 acres of jowar, bajra or maize. The sugar factories too consume huge quantities. From cultivation to processing, each kilo of refined sugar needs two to three tonnes of water. Save argued this could be used to grow, by the traditional, organic way, about 150 to 200 kg of nutritious jowar or bajra (native millets).

The colonisation of Mexico by US agribusiness

If Bhaskar Save helped open people's eyes to what has happened on the farm and to ecology as a result of the green revolution, a [2015 report](#) by GRAIN provides a wider overview of how US agribusiness has hijacked an entire nation's food and agriculture under the banner of 'free trade' to the detriment of the environment, health and farmers.

In 2012, Mexico's National Institute for Public Health released the results of a national survey of food security and nutrition. Between 1988 and 2012, the proportion of overweight women between the ages of 20 and 49 increased from 25 to 35% and the number of obese women in this age group increased from 9 to 37%. Some 29% of Mexican children between the ages of 5 and 11 were found to be overweight, as were 35% of the youngsters between 11 and 19, while one in 10 school age children suffered from anaemia. The Mexican Diabetes Federation says that more than 7% of the Mexican population has diabetes. Diabetes is now the third most common cause of death in Mexico, directly or indirectly.

The various free trade agreements that Mexico has signed over the past two decades have had a profound impact on the country's food system and people's health. After his mission to Mexico in 2012, the then Special Rapporteur on the Right to Food, Olivier De Schutter, concluded that the trade policies in place favour greater reliance on heavily processed and refined foods with a long shelf life rather than on the consumption of fresh and more perishable foods, particularly fruit and vegetables.

He added that the overweight and obesity emergency that Mexico is facing could have been avoided, or largely mitigated, if the health concerns linked to shifting diets had been integrated into the design of those policies.

The North America Free Trade Agreement led to the direct investment in food processing and a change in the retail structure (notably the advent of supermarkets and convenience stores) as well as the emergence of global agribusiness and transnational food companies in Mexico. The country has witnessed an explosive growth of chain supermarkets, discounters and convenience stores. Local small-scale vendors have been replaced by corporate retailers that offer the processed food companies greater opportunities for sales and profits. Oxxo (owned by Coca-cola subsidiary Femsa) tripled its stores to 3,500 between 1999 and 2004. It was scheduled to open its 14 thousandth store sometime during 2015.

De Schutter believes a programme that deals effectively with hunger and malnutrition has to focus on Mexico's small farmers and peasants. They constitute a substantial percentage of the country's poor and are the ones that can best supply both rural and urban populations with nutritious foods. Mexico could recover its self-sufficiency in food if there were to be official support for peasant agriculture backed with amounts comparable to the support granted to the big corporations.

In Mexico, the loss of food sovereignty has induced catastrophic changes in the nation's diet and has had dire consequences for agricultural workers who lost their jobs and for the nation in general. Those who have benefited include [US food and agribusiness interests, drugcartels and US banks and arms manufacturers](#).

The writing is on the wall for other countries because what happened in Mexico is being played out across the world under the banner of 'free trade'.

GMOs a bogus techno quick-fix to further benefit global agribusiness

Transnational agribusiness has [lobbied for, directed](#) and profited from the very policies that have caused the agrarian/food crisis. And what we now see is these corporations (and their supporters) espousing cynical and [fake concern](#) for the plight of the poor and hungry (and the environment which they have done so much to degrade), and offering more (second or third generation... we have lost count) chemicals and corporate-patented GM wonder seeds to supposedly 'solve' the problem of world hunger. GM represents the final stranglehold of transnational agribusiness over the control of seeds and food.

The misrepresentation of the [plight of the indigenous edible oils sector](#) in India encapsulates the duplicity at work surrounding GM. After trade rules and cheap imports conspired to destroy farmers and the [jobs of people involved in local food processing activities](#) for the benefit of global agribusiness, including commodity trading and food processor companies ADM and Cargill, the same companies are now leading a campaign to force GM into India on the basis that Indian agriculture is unproductive and thus the country has to rely on imports. This conveniently ignores the fact that prior to neoliberal trade rules in the mid-1990s, India was almost self-sufficient in edible oils.

In collusion with the Gates Foundation, these corporate interests are now seeking to secure [full spectrum dominance](#) throughout much of Africa as well. Western seed, fertiliser and pesticide manufacturers and dealers and food processing companies are in the process of securing changes to legislation and are building up logistics and infrastructure to allow

them to recast food and farming in their own images.

Today, governments continue to collude with big agribusiness corporations, which seek to eradicate the small farmer and subject countries to the vagaries of rigged global markets. Agritech corporations are being allowed to shape government policy by being granted a [strategic role](#) in trade negotiations and are increasingly framing the policy/knowledge agenda by [funding and determining](#) the nature of research carried out in public universities and institutes.

Bhaskar Save:

“This country has more than 150 agricultural universities. But every year, each churns out several hundred ‘educated’ unemployables, trained only in misguiding farmers and spreading ecological degradation. In all the six years a student spends for an M.Sc. in agriculture, the only goal is short-term – and narrowly perceived – ‘productivity’. For this, the farmer is urged to do and buy a hundred things. But not a thought is spared to what a farmer must never do so that the land remains unharmed for future generations and other creatures. It is time our people and government wake up to the realisation that this industry-driven way of farming – promoted by our institutions – is inherently criminal and suicidal!”

At the end of the above quote, Save is referring to the near 300,000 farmer suicides that have taken place in India over the past two decades due to economic distress resulting from [debt, a shift to \(GM\)cash crops and economic ‘liberalisation’](#) (see [this](#) report about a peer-reviewed study, which directly links suicides to GM cotton).

The current global system of chemical-industrial agriculture, World Trade Organisation rules and bilateral trade agreements that agritech companies helped draw up for their benefit are a major cause of structural hunger, poverty, illness and environmental destruction. By its very design, the system is parasitical.

Agroecology as a credible force for change

Across the world, we are seeing farmers and communities continuing to resist the corporate takeover of seeds, soils, water and food. And we are also witnessing inspiring stories about the successes of agroecology: a model of agriculture based on traditional knowledge and modern agricultural research utilising elements of contemporary ecology, soil biology and the biological control of pests.

Reflecting what Bhaskar Save achieved on his farm in Gujarat, the system combines sound ecological management, including minimising the use of toxic inputs, by using on-farm renewable resources and privileging endogenous solutions to manage pests and disease, with an approach that upholds and secures farmers’ livelihoods.

Agroecology is based on scientific research grounded in the natural sciences but marries this with farmer-generated knowledge and grass-root participation that challenges top-down approaches to research and policy making. It can also involve moving beyond the dynamics of the farm itself to become part of a wider agenda, which addresses the broader political and economic issues that impact farmers and agriculture (see [this description](#) of the various modes of thought that underpin agroecology).

[Last year the Oakland Institute](#) released a report on 33 case studies which highlighted the success of agroecological agriculture across Africa in the face of climate change, hunger and poverty. The studies provide facts and figures on how agricultural transformation can yield immense economic, social, and food security benefits while ensuring climate justice and restoring soils and the environment. The research highlight the multiple benefits of agroecology, including affordable and sustainable ways to boost agricultural yields while increasing farmers' incomes, food security and resilience.

The report described how agroecology uses a wide variety of techniques and practices, including plant diversification, intercropping, the application of mulch, manure or compost for soil fertility, the natural management of pests and diseases, agroforestry and the construction of water management structures. There are many other examples of successful agroecology and of farmers abandoning green revolution thought and practices to embrace it (see [this](#) report about El Salvador and [this](#) from South India).

Various official reports have argued that to feed the hungry and secure food security in low income regions we need to support small farms and diverse, sustainable agro-ecological methods of farming and strengthen local food economies (see [this](#) report by the UN Special Rapporteur on the right to food and [this](#) (IAASTD) peer-reviewed report).

[Olivier De Schutter](#), former UN Special Rapporteur on the right to food:

“To feed 9 billion people in 2050, we urgently need to adopt the most efficient farming techniques available. Today’s scientific evidence demonstrates that agroecological methods outperform the use of chemical fertilizers in boosting food production where the hungry live especially in unfavorable environments.”

De Schutter’s report indicated that small-scale farmers can double food production within 10 years in critical regions by using ecological methods. Based on an extensive review of the recent scientific literature, the study calls for a fundamental shift towards agroecology as a way to boost food production and improve the situation of the poorest. The report calls on states to implement a fundamental shift towards agroecology.

The success stories of agroecology indicate what can be achieved when development is placed firmly in the hands of farmers themselves. The expansion of agroecological practices can generate a rapid, fair and inclusive development that can be sustained for future generations. This model entails policies and activities that come from the bottom-up and which the state must invest in and facilitate.

Proponents of agroecology appreciate that a decentralised system of domestic food production with access to local rural markets supported by proper roads, storage and other infrastructure must take priority ahead of exploitative international markets dominated and designed to serve the needs of global capital. Small farms are per area [more productive](#) than large-scale industrial farms and create a [more resilient, diverse food system](#). If policy makers were to prioritise this sector and promote agroecology to the extent ‘green revolution’ practices and technology have been pushed, many of the problems surrounding poverty, unemployment, rising population and urban migration could be solved.

While many argue in favour of agroecology and regard it as a strategy for radical social change, some are happier for it to bring certain benefits to farmers and local communities

and see nothing wrong with it being integrated within a globalised system of capitalism that continues to centralise power and generally serve the interests of the global seed, food processing and retail players. And that is the danger: a model of agriculture with so much potential being incorporated into a corrupt system designed to suit the needs of these corporate interests.

But there is only so much that can be achieved at grass-root level by ordinary people, often facilitated by non-governmental agencies. As long as politicians at national and regional levels are co-opted by the US and its corporations, seeds will continue to be appropriated, lands taken, water diverted, legislation enacted, research institutes funded and policy devised to benefit global agribusiness.

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