GLOBALIZATION AND INDUSTRIAL AGRICULTURE

Industrial agriculture has been growing in the United States, especially since the Second World War. It has become the model of agriculture promoted by U.S. agribusiness companies worldwide, with the support of the World Bank and more recently the World Trade Organization. Traditional agriculture, in which farmers saved seed for the next sowing, shared seed with neighboring farmers, built soils by integrating into them animal and plant wastes, interspersed several crops in the same field for natural weed and pest control, left hedgerows along the fields and rotated fields to allow them to lie fallow periodically, integrated plants with raising animals and sold produce primarily in the local community, is seen as “primitive” and incapable of providing the food needs of the world today.

The Fatal Harvest Reader: The Tragedy of Industrial Agriculture, edited by Andrew Kimball, criticizes the global effort of agribusiness to supplant traditional methods of farming under the headings of “Seven Deadly Myths of Industrial Agriculture.”

Myth 1: “Industrial agriculture is needed to increase food supply to keep up with expanding population.” In fact, adequate food to feed the world is already being produced. The primarily reason that a growing number of humans are hungry is because they are poor and unable to buy the food they need. Industrial agriculture has greatly added to this poverty by driving out local farmers and thus making more and more people dependent on buying high-priced imported food, rather than growing it locally themselves.

Myth 2: “Industrial agriculture produces food that is safe, healthy and nutritious.” In fact, industrial agriculture is producing food that is increasingly unhealthy and unsafe because of the heavy use of pesticides to grow Corporate Globalization and the Deepening of Earth’s Impoverishment and irradiation to kill the pathogens created by long transportation chains and unhealthy ways of raising and slaughtering animals. It is made to look good by coloring added to meat and fruit, but it is often flat tasting and lacking in nutrition compared to locally produced organic food.

Myth 3: “Industrial agriculture provides cheap food and so is affordable for all.” In fact, food grown by industrial agriculture is enormously expensive, if one factors in the costs of seeds, artificial pesticides, fertilizers, machinery, packaging, processing, and transportation, plus the damage it is doing to human and environmental health. It appears cheap only because of government subsidies and the passing along of these hidden costs to the public.

Myth 4: “Industrial agriculture is efficient, growing far more food per acre than traditional agriculture.” In fact, industrial agriculture appears efficient only because it is based on single crops grown on huge acreage planted from edge to edge. But the damage it causes to the soil and environment
means that output per acre drops after time and is maintained only by increased inputs of fertilizers and pesticides that only exacerbate the problems. Small organic family farms appear inefficient because they grow a variety of crops and animal products, but they actually produce two to six times more per acre than large industrial agribusinesses.

Myth 5: “Industrial agriculture is giving us far more choices in our food.” In fact, modern supermarkets appear to offer a great variety only because long transportation chains are bringing food from all over the world without regard to local seasonal production. Also competitive packaging of products, such as breakfast cereals, appears to offer many choices, but their contents are largely identical. But industrial agriculture is actually destroying the enormous variety of species of foods, such as the thousands of types of rice, potatoes, corn, beans, fruits, and vegetables that have been bred by local farmers over the centuries, reducing the world’s food supply to a dangerously narrow monoculture of a few species.

Myth 6: “Industrial agriculture protects the environment and wildlife.” In fact, industrial agriculture is rendering our soil, air, and water highly polluted, threatening the very survival of adequate food production. By continually destroying the habitats of diverse varieties of plants and animals, as well as poisoning water and soil through pesticides, it is a major cause of extinction of hundreds of thousands of species of plants and animals.

Myth 7: “If industrial agriculture has problems with continually expanding healthy and abundant food, these can be fixed by biotechnology.” In fact, biotechnology is greatly exacerbating these problems, threatening dangerous health consequences to humans and the environment, as well as further destruction of local sustainable farming.

The truth of this critique of industrial agriculture and its advancement into biotechnology can be made clear by a brief review of some of the data (which can be found in much greater detail in the current critical literature). 32 First, something about artificial fertilizers and pesticides. Interestingly enough, most of these chemical inputs were first developed in the First and Second World Wars, as nerve gases and material for bombs to kill humans and destroy foliage. Their use in agriculture expresses a mentality of looking at nature as something to be conquered and subdued, rather than as a living world that humans work with and within.33

Soil fertility is based on organic humus as a teeming community of living organisms. Organic farming renews and builds humus by decomposing plants and animal wastes and integrating them back into the soil. Artificial fertilizer, by contrast, is based on isolating the chemicals of plant fertility, such as nitrogen, phosphorous, and potassium, and applying them directly to the soils. This actually destroys soil biodiversity, diminishing the nitrogenfixing bacteria and making soil less porous and more in need of water. Adding more water and chemicals increases this problem and causes soil erosion, draining nutrients off the soil and the chemically laden water into rivers. This causes nitrogen-choked waters that shut off oxygen and asphyxiate aquatic life.
From the farms of the Great Plains of the U.S. this runoff drains into the Mississippi Delta, forming a vast dead zone. It also contaminates aquifers and contributes to greenhouse gases. Ingested in humans, it reduces oxygen in human blood, causing the blood disease myoglobinemia. Enormous energy is used to produce this form of nitrogen (some 2200 lbs of coal to produce 5.5 lbs of nitrogen).34

Pesticides, also developed originally for war use, kill insects by such methods as blocking the nerve-impulse enzyme. But they also kill birds, fish, reptiles, mammals, as well as injuring humans or killing them in high doses. Cancers, and neurological, reproductive, and developmental damage, are some effects of pesticides on humans. It is estimated that from 3 to 25 million people are injured by pesticide use worldwide, especially farmworkers who come into direct contact with these substances.35 In India, where forced incorporation into industrial agriculture caused the bankruptcy of many traditional farmers, money lenders encouraged farmers to commit suicide to pay their debts out of their liquidated assets; hundreds did so by swallowing pesticides.36

Corporate industrial agribusiness creates a global system of food trade that demands a vast transportation system. It is estimated that the food that appears on an American dinner plate has traveled an average 1300 miles.37 Often this trade results in ships passing one another with the same foods, such as India sending grain to the United States, while the U.S. sends grain to India. In 1998 Britain imported 240,000 tons of pork and 125,000 tons of lamb, while exporting 195,000 tons of pork and 102,000 tons of lamb.38 Massive infrastructures of superhighways, railroads, ships, and planes are needed for this global food transport. This not only uses a great deal of fossil fuel energy, but also releases an enormous amount of toxics into the air and water. Pests are carried along within this transport system. Various kinds of doctoring and packaging are used to give the food a longer shelf life.

Much food is wasted in this process, since only “perfect” fruits and vegetables, without spots or bruises, are allowed to appear on supermarket shelves.39 Factory farming of animals has been much criticized. I will only mention a few problems here. The crowding of animals in small spaces, the antibiotics used to prevent them from becoming diseased, and artificial stimulants to make them grow faster and irradiation of meat to kill resulting pathogens all add to the health hazards of meats produced in this way.40 A recent fiasco of industrial meat production was the outbreak of mad cow disease in Britain in 1999, as well as smaller outbreaks elsewhere. Mad cow disease is caused by feeding herbivore cows animal protein to stimulate growth, derived from dead and often diseased sheep and even other cows.

The result was scrapie brain disease that can also be passed to humans as the Creutzfeldt-Jacob brain degeneration disease.41 Vandana Shiva contrasts what she calls “sacred cow cultures,” which respect cows in an integrated system of farming, with “mad cow cultures” that treat cows as simply milk and meat producing machines.42
These drastic problems, however, have not suggested to corporate leaders the need to return to more organic, locally produced and marketed methods of agriculture, but rather the creation of a yet more globally integrated system that drives small farmers into bankruptcy. A few giant corporations, such as Monsanto and Dupont, control the entire process of food production and delivery from seeds, fertilizers, and pesticides to transportation, packaging, and delivery.

One way of seeking to either replace local farmers with agribusiness or make farmers dependent on agribusiness giants is the patenting of seeds. Slightly altered seeds are bred by combining traditional varieties, claiming superior characteristics of productivity and nutrition. These are then patented and the agribusiness claims ownership of them. Farmers are then sued by these companies for saving seed from harvests and replanting them; thus these companies seek to make farmers dependent on seed companies for their seed. American patent law allows those who breed a “new” seed to patent it, even if virtually the same seed has existed long before in other countries. Thus a Colorado farmer, Larry Proctor, bred a yellow bean from beans he bought in Mexico and patented it. He then claimed ownership of this bean worldwide, forbidding Mexicans from growing and selling this same bean that they had grown for centuries.43

This appropriation not only of seed but all the stages of food production from local farmers, forcing them into dependence as contract labor for corporate giants, is greatly extended by genetic engineering. Genetic engineering of seeds is done by breaking into the cellular structure of plants, forcing DNA from another plant or even an animal into the cell structure, thus producing plants with new characteristics. Viruses and bacteria are used to insert such foreign DNA into the cell. Antibiotic markers test whether the insertion has been successful. Thus human growth genes have been inserted into cattle and fish, fish genes into tomatoes, pesticide genes into corn, even firefly genes into tobacco to cause it to glow in the night!44

One extraordinary product of such genetic engineering is the “terminator seeds” designed to go sterile after the first planting, thus creating a built-in “police” system to prevent farmers from saving and growing their own seed.45 Other genetically engineered (GE) seeds are herbicide resistant soybeans that allow the spraying of herbicides on all the other plants between the rows of soybeans without killing the soybean plants. Needless to say the farmers who use these seeds are also dependent on the same company to provide them with the herbicides to be used with these seeds. Another GE seed is one that has a built-in insecticide which then kills insects that try to eat the plant. This is marketed as a “brilliant” way to reduce the use of insecticides.46

These genetically altered seeds also have built-in problems. Terminator seeds do not stay within the plants they are intended to produce, but drift to nearby plants and thus could cause mutations of new plants, both wild and domestic, that are incapable of reproducing themselves. Insecticides in plants work for a while, but typically result in new, more insecticide resistant super pests being produced, demanding additional and stronger insecticides.
Likewise herbicide resistant plants help spark super weeds immune to the herbicides sprayed on them. Moreover GE foods remain largely untested on humans, and U.S. corporations seek to market them without labeling their origins. A variety of health hazards from them are likely, such as growing resistance to antibiotics that come from the antibiotic markers in such plants. Worldwide protest is rising against the growing and marketing of these seeds, even though there is growing use of them in both U.S. agriculture and global agribusinesses owned by U.S. companies.