

INTRODUCTION

by FRED MAGDOFF, JOHN BELLAMY FOSTER
and FREDERICK H. BUTTEL

The conventional view that agriculture was displaced by industry in two stages—by the industrial revolution in the late nineteenth century, and as a result of the rise of the agribusiness system in the mid-twentieth century—has left many observers of the contemporary political economy with the impression that to deal with agriculture is essentially to focus on political-economic history rather than contemporary political economy. Nothing could be further from the truth. The purpose of this special issue of *MR* is to help compensate for the neglect that agriculture has often suffered in political-economic literature of the late twentieth century. In so doing we will continue with a line of argument that was introduced in *MR* more than a decade ago in the July-August 1986 special issue *Science, Technology, and Capitalism*, edited by Steffie Woolhandler and David Himmelstein, which included landmark essays on U.S. agriculture and agricultural research by Richard Lewontin and Jean-Pierre Berlan.

Historically, the significance of agriculture to the origin and development of capitalism cannot be overemphasized. The

Frederick H. Buttel is professor of Rural Sociology and Environmental Studies at the University of Wisconsin-Madison. He is author or editor of several books, including a forthcoming anthology entitled *Environment and Modernity* (London: Sage, 1999). John Bellamy Foster, a member of the Board of the Monthly Review Foundation, teaches sociology at the University of Oregon, and is coeditor of *Organization & Environment*. He is the author of *The Theory of Monopoly Capitalism* (1986) and *The Vulnerable Planet* (1994), both published by Monthly Review Press. Fred Magdoff is professor of Plant and Soil Science at the University of Vermont. He is the author of numerous scientific articles and of the book *Building Soils for Better Crops* (University of Nebraska Press, 1993).

development of capitalism in England depended on the increasing surpluses resulting from an agriculture in the throes of major technical and social transformations. And England's distinctive patterns of land holding created a new kind of market dependency in agricultural production that was critical to the initiation of dynamic capitalist relations geared to constant productivity growth (see Wood, this issue). In subsequent development, the rise of industry in no way left agriculture behind, but was mirrored (indeed in some cases prefigured) at each stage by changes in the latter.

Agriculture, which has been dominated for decades in the United States and, more recently in the rest of the world, by large agribusiness corporations, is now once again undergoing rapid, even unprecedented change. To be sure, much of this story—concentration and centralization of capital and exclusion of peasants and farmers from the land—is not new. But the trends witnessed in agriculture in the late twentieth century are distinctive in several important respects. Concentration and centralization and rural dispossession within this sector are being reinforced by new technological innovations, particularly in the area of biotechnology, leading to such developments as the proletarianization of the farmer, and to the appropriation of ownership and control of indigenous plants and animals in third world countries. The global commodification of agriculture has its counterpart in the destruction of peasant and small-scale agriculture throughout the world. Subsistence farming is in decline in the third world while the production of luxury crops for export to the rich countries is being expanded as never before. The result is a rise in world food supplies, together with an increase in world hunger. So sharp are these contradictions that hunger is expanding in the United States itself, at the very heart of the system, where it is no longer surprising to see food lines and soup kitchens. The growth of agribusiness has also generated more and more ecological problems through the subdivision of traditional diversified farming into specialized production, the break in the soil nutrient cycle, the pollution of land and water (and food itself) with chemicals, soil erosion and other forms of destruction of agricultural ecosystems, and so on. These developments in world agriculture, however, have not gone unanswered. Movements dedicated to promoting sustainable agriculture, fighting hunger, supporting family- and small-scale farming, and staving off ecological destruction have sprouted from the rural and urban

grassroots everywhere: locally, nationally, and globally. Our purpose in generating this special issue is to provide the basis for a coherent analysis of these developments.

The essays in *Hungry for Profit* are focused on the political economy of agriculture, food, and ecology. Each article adopts an historical approach while at the same time focusing on issues of current concern and of importance for the future. Further, each of the essays is a critique in the classical sense of striving to penetrate a contradictory reality in order to develop the means for transcending it. Capitalism presents us with the paradoxical reality of a rapid growth of food production and perpetuation of overproduction (relative to markets and income distribution) on one hand, accompanied by the reinforcement of social exclusion and thus the growth of hunger on the other. The latter is not, as is sometimes thought, mainly a result of population growth (which has generally been surpassed by the growth of productivity in agriculture), but instead a consequence of the fact that the immediate object of food production is not human sustenance and well-being but the growth of profits. The coincidence of hungry mouths with overflowing grain silos may seem to be a paradox, but it is a paradox not of our analysis, but of capitalist agribusiness itself.

Historical Turning Point

There can no longer be any doubt today, on the brink of the twenty-first century, that we are in the midst of an unusually rapid change in all aspects of the world's agriculture-food system. This system consists of the farmers who produce the food, but also the huge industry that supplies farmers with inputs, from seeds to fertilizers to tractors to fuel, and the even larger industry that processes, packages, and distributes the food. And, although international trade in agricultural products has occurred for centuries, the pace at which the world is being bound together by trade and the penetration of third world agriculture by the largest of corporations is also quickening (McMichael, this issue).

Traditionally, the various activities of different parts of the agriculture-food system have involved many players—numerous suppliers of inputs, millions of farmers, many purchasers of agricultural commodities, and processors and distributors of food—and have often been portrayed as the textbook example of free-market competition. In *Monopoly Capital* (1966), Paul Baran and Paul Sweezy discussed the process of the increasing

concentration and centralization of production under a mature capitalism, which results in a few "corespective" firms dominating most industrial sectors. Under these conditions, a handful of giant corporations control the bulk of a particular market, and the struggle over market share is more by advertising, product differentiation, and brand identification than price competition. The process of concentration and centralization of the agriculture and food sectors of the economy is occurring later than in the nonfarm industrial sectors. But recent decades have witnessed a startling pace of concentration of suppliers of agricultural inputs that farmers must purchase (such as seeds, fertilizers, pesticides, and machinery) as well as concentration in the food processing, distribution, and retail sectors, where a relatively small number of food conglomerates now play a dominant role (see Heffernan article).

How food is produced and how it gets from farm fields to people's tables (the entire food system) is something that obviously concerns everyone. Today there is growing popular fear over possible pesticide contamination of food as well as with the microbiological safety of the food supply. Recent outbreaks of illness have been associated with a variety of contaminated products—meat, juice, fruits, and vegetables. But the food safety question so much on people's minds is only one small part of the picture. Other important issues include concentration of ownership and control in the production, processing, and marketing of food; safety of farmers and farmworkers when using pesticides; the heavy dependence on nonrenewable resources; the rush to use genetically modified plants, animals, and microorganisms; contamination of surface- and groundwaters with pesticides and nutrients; low returns for most farmers; low wages and poor working and living conditions for farmworkers; cruel treatment of livestock; and inadequate access to food by poor people. The negative influences of current agricultural practices on ecological systems at the local, regional, and global levels (Altieri, Foster, and Magdoff, this issue) affect the lives of all of us as well as many other species. The environmental, social, and economic problems are intertwined, and all are related to the structure of agriculture as it has developed in the late twentieth century.

There are now few buyers for most raw agricultural products. This has left farmers without truly free markets to sell their commodities. Although supply and demand forces, when at their extremes, certainly influence the prices of agricultural

commodities, prices for most agricultural commodities have generally remained low and the farmer's share of the food dollar (after paying for input costs) has steadily declined from about 40 percent in 1910 to less than 10 percent in 1990. The enormous power exerted by the largest agribusiness/food corporations allows them essentially to control the cost of their raw materials purchased from farmers while at the same time keeping prices of food to the general public at high enough levels to ensure large profits. It is no accident that the food industry is the second most profitable one in the United States, following pharmaceuticals!

While Baran and Sweezy wrote persuasively and perceptively about how concentration and centralization of capital was occurring and would decisively affect national economies and societies, several of the essays in this special issue point to how these concentration and centralization processes are being shaped by the globalization of capital in agriculture and agro-food systems. Heffernan's essay portrays the breakneck pace of concentration and centralization of agribusiness capitals at a global scale. McMichael notes that the emergence of new global trade rules over the past twenty-five years—culminating in the World Trade Organization, the North American Free Trade Agreement, other regional trade agreements, and the proposed Multilateral Agreement on Investment (MAI)—has contributed to the expansion of global sourcing of foodstuffs and to the growth of export-oriented production in the third world.

Just as remarkable as the globalization of the agro-industrial chain of production and distribution are the trends in the United States and most other nations toward the industrialization of agriculture and contractual integration. Recognizing that farming tends not to be very profitable and that cheapening the cost of obtaining raw food products is a key to corporate profitability, agribusiness firms have begun to develop "industrial"—or factory-style—production systems and contractual integration arrangements in which the decisions about how to produce crops and animals are increasingly being taken over by the large agribusinesses (see Lewontin, this issue). In the extreme situation, such as poultry growers under contract to Tyson or Ferdue, or hog producers under contract to Murphy Family Farms, independent farmers are reduced to the position of laborers, but without the rights of workers to collectively bargain.

Contractual integration in the white and red meat sectors (especially broilers and hogs) is closely associated with industrialized or "factory" farming. Meat packers and processors prefer

factory farming because it provides them with large, predictable quantities of uniform commodities. Though factory farming and contractual integration are often justified in terms of the need to respond to "consumer preferences," consumers more often than not oppose factory farming, and there appear to be few benefits for consumers from these types of production systems. The development of factory farms, which produce animals under the most cruel conditions as part of a vertically integrated production system, has also resulted in the separation of the animals from the land that produces their feed (see Foster and Magdoff article, this issue). This phenomenon is in addition to the separation of the mass of the population from the land that occurred when industrialization caused the migrations to urban centers (a process that continues to this day in third world countries, with or without commensurate industrialization). The ecological consequences of that were outlined by Marx in *Capital*.

Technology and Ever-Increasing Scale

As is generally the case for relatively small-scale producers of commodities under capitalism, farmers are on a treadmill in which the downward pressure on prices they receive—and/or the upward pressure on inputs needed for production—force them to adopt new technologies and to increase the scale of production in an attempt to stay in business. (It has been said that farming is one of the few businesses that pays retail prices for inputs and sells its products at wholesale prices.) As the financial returns of farmers decline per unit of output, in order to reap the same returns as before the farmers are told that they must get larger or get out. The treadmill that this creates is indicated by an old New England saying—we grow more corn, to feed more cows, to make more milk, to buy more land, to grow more corn. However, recent study of dairy farmers in New York State showed that their profit per cow decreased as production per cow and herd size increased. More production is needed just to stand still!

The physical advantages that accrue to increasing production scale (mainly more efficient use of labor and machinery) reach their limits fairly quickly in agriculture. For most commodities medium-sized family farms are as or more efficient than larger, more industrial ones. But that doesn't mean that there aren't real advantages to very large farms in a capitalist economy—they typically receive a premium for the commodities they sell

because of their large volumes, pay less for purchased inputs and for interest on borrowed money, and have more opportunity for making profits through the use of hired labor.

In the most industrialized and "integrated" sectors such as broilers, "open markets" disappear, and only those producers who have production contracts with processors and other agribusiness "integrators" are able to find a market for their products. A number of publicly funded agricultural experiment stations have also tended to give more attention to factory producers—who account for a very small share of their clientele—than to the far more numerous, but less influential family-scale farmers.

Those who can't keep up with the treadmill of producing on an ever increasing scale tend to be forced out of farming, and their children are discouraged from entering farming. This is what has been responsible for the drastic decline in the numbers of farms in many countries; in the United States from close to 7 million in the 1930s to about 1.8 million by the mid 1990s. And as farmers left the land, the effects on minorities were devastating. From a high of 14 percent of all U.S. farms being owned by blacks in the 1930s, today less than 1 percent are black-owned. The bulk of decline in farms occurred from the end of the Second World War through the early 1970s, when farm numbers stabilized at approximately 2.0 million and declined by only 0.2 percent a year through the early 1980s. During the severe "farm crisis" of the 1980s, U.S. farm numbers again declined at a rapid pace (of approximately 17 percent per decade), but are now declining at a slower rate. The rates of decline in farms have been particularly startling in the livestock sectors that are undergoing the most rapid industrialization and movement toward factory farming. Since the early 1980s the numbers of broiler, hog, and dairy farmers have declined at about 4.0 to 4.5 percent per year.

As farm numbers declined during the last half century, the average farm size increased and the largest of farms have come to account for a sizable proportion of production. At present, the 122,000 largest farms in the United States, representing only 6 percent of the total number, receive close to 60 percent of total farm receipts. These large farms have also been able to reap a disproportionate amount of government support payments, receiving over 30 percent of the payments for the commodity programs.

In the Third World, displacement of farmers under internal pressures, as well as external pressures arising from growing

imports from the first world, has led to a loss of huge numbers of people from the land, and has resulted in the swelling of cities.

Technology to the Rescue?

A number of technological fixes have been proposed for the environmental problems of agriculture and food. For example, instead of solving food safety problems by shortening the distance between the point of production and the point of consumption, and producing animals in a small-scale, stress-free, pleasant and clean environment, industry has been promoting irradiation of meat as a cure to bacterial contamination.

A good example of misplaced priorities is that of "precision farming." Over the past few years farm machinery and chemical companies have been pushing precision (or "prescription") farming, whereby through the use of global positioning technology (developed by military contractors as part of Reagan's "Star Wars" initiative), yield monitors, extensive field sampling and mapping, and variable application rate machinery, it is possible to apply agrichemicals according to the supposed needs of different parts of a field. It is clearly the case that for decades many fertilizers and pesticides have been applied at higher rates than are economically justifiable. Proponents of precision farming believe that this technology can tailor doses of chemicals to the specific characteristics of small parts of a field, and thereby avoid overusing chemicals on plots of land where the chemicals result in little additional yield. There is little evidence, however, that the precision technology brings any better environmental results than could be obtained with common sense reductions in the use of agrichemicals based on previously available methods. And in many cases it has been found that farmers employing precision farming techniques use a greater overall level of chemicals than they did before.

The push toward biotechnology is being driven by corporations looking for ways to expand their profit-making potential (see the articles of Middendorf *et al.* and Lewontin, this issue). While the quest for profits is hardly unique to biotechnology firms, the way that the biotechnology industry developed historically has made this quest a particularly frantic one. The agricultural biotechnology industry dates from the early 1980s. With a very few exceptions, the billions of dollars invested in crop and livestock biotechnology research since the early 1980s yielded virtually no commercial products by the mid-1990s. Thus, with staggering investments but no significant revenues,

agricultural biotechnology firms have been particularly intent in the 1990s on the need to speed up the introduction of products into the market. The tendency has been for these corporations to release as many products as possible, many of which have some significant shortcomings, and then convince farmers that they need the particular products that have been developed. Bovine growth hormone, for example, can increase milk production by 10 percent or more per cow. This is a dubious advantage, however, when the price of milk received by farmers has declined in real terms (corrected for inflation) by over half since the early 1980s, and when the number of dairy farmers is already declining by about 40 percent each decade. As noted by Lewontin, other first-generation biotechnology products, such as Bt-engineered and herbicide-tolerant crop varieties, have significant liabilities as well. Even the more environmentally benign "identity-preserved" biotechnology products, which can potentially increase the quality of food products, are likely to serve as the newest frontier for capital to extract profits from agriculture, and through "integration" will serve to convert more farmers into essentially being a proletariat that nominally "owns" but has lost control over its own land (see Lewontin's article).

Responses to the Onslaught

There have been many responses around the world to the negative effects of the developing monopoly capital control of the agriculture-food system. In third world countries there have been efforts against the patenting of plant genetic information (which really constitutes the common heritage of the world's people, and is to a large extent the cultural product of indigenous peoples over many generations), as well as struggles against the trade treaties, such as the World Trade Organization and NAFTA, that tie countries closer together by exposing all to the full force of the free market in which the more powerful gain and the less powerful lose out. Farmers and the general public in Europe are trying to resist the importation of genetically modified grains (like "Roundup Ready" soybeans) and beef produced using hormone stimulants.

In the United States, literally hundreds of organizations have been formed to struggle against one or another of the many problems (Henderson, this issue). These organizations and groups have fought for changes in state and national laws, have promoted research aimed at developing practices that are appropriate for environmentally sound farming on a small to

medium scale, have specifically promoted organic agriculture, and have provided direct assistance for farmers to help them survive in a very hostile climate.

It has often been suggested that most farmers can't survive by selling undifferentiated commodities such as wheat, corn, apples, milk, and meat to wholesale processors because of the unequal power relations between direct producers and agribusinesses. Thus, it is believed that to thrive in an era dominated by giant agribusiness corporations farmers must either find a niche crop that few others are growing, start their own processing business (to capture some of the added value to their agricultural product), or sell directly to the public through farmers markets or Community Supported Agriculture (CSA) farms, where people buy shares in the production of the farm before the season starts. Some of these groups concede the loss of the mass of agricultural production to corporate agribusiness and the largest farms. Each of the proposed solutions may help those individual farmers with entrepreneurial skills, or boost those who enjoy working with the public. But while there certainly are some niches available, once they are developed and other farmers start to get into the same enterprise, the niche becomes less lucrative. It cannot offer relief for the mass of farmers. Moreover, once a particular niche grows into a large-scale operation (as in the case of today's organic food industry) it will inevitably face new pressures from agribusiness determined to monopolize all large-scale, lucrative markets.

A parallel social movement has developed in response to the persistence of hunger in the midst of plenty and the decrease in support of food distribution through governmental programs. Many efforts have taken place all over the United States to remedy this problem, including soup kitchens, the opening up and expanding of food shelf pantries that distribute food to the poor, and many corporate or organizational food drives that collect food for later distribution. Nevertheless, the focus has all too often been simply on hunger and what can be done to alleviate it, without going deeper to underlying causes (Poppendieck, this issue).

In the noncapitalist world (i.e., Cuba) and the formerly noncapitalist world (i.e., China), two countries are attempting very different pathways in a sea of change. Cuba is facing severe dislocations caused by the breakup of the Soviet Union. It is under severe pressure because of the lack of fuel and access to other inputs needed to run the high-input, large-scale production system they

copied from the Russians. The Cuban state and farmers have turned to small-scale production, in many cases using animal power and organic agricultural techniques (see Rosset, this issue). They are also encouraging urban gardening to help provide food during this crisis.

China, in contrast, is moving in a very different direction. The government, as part of its program to achieve and maintain very high rates of income growth through reintroducing capitalist relations, has largely disbanded the agricultural cooperatives. Agricultural plots have been sliced up into narrow strips (see Hinton, this issue). Because there is little animal power available and the individual strips are too small to justify use of tractors (which are now mainly used for transportation), most farmers are not able to do a good job of managing their fields. Farmers routinely burn crop residues, just to get rid of them, instead of incorporating them into the soil to make it more fertile, improve its structure, and make it more healthy. Instead of supporting small-scale, resource-efficient agriculture as in Cuba, the infrastructure being developed under government direction (fertilizer and other agrichemical factories) is aimed at high-input systems. Better soil and crop management under these conditions would seem to call for consolidating small strips into larger units of production. Ironically, the effects of the extensive land reform of 1947, a critical part of the success to date of the country's agriculture, has provided an important buffer to the Chinese peoples' food supply as the government heads in the direction of privatization.

What Can be Done?

It is clear that the current food system in all its ramifications is not beneficial for the mass of farmers or the environment, nor does it ensure a plentiful supply of food for all people. However, it does meet the needs of a limited group of large farmers and, of course, the sellers of agricultural inputs as well as the processors, distributors, and sellers of food. Can tinkering with the existing capitalist system realistically be expected to make the changes needed toward a more environmentally sound and humane food system? Such a sound and humane system would, minimally, be one in which:

(1) People would live in greater proximity to agricultural land and animals would be raised more humanely, and reunited with the cropland that produces their feed (so that

nutrients can be recycled more easily with fewer environmental problems).

(2) The power of a few corporations to control so much of food production, processing, and sales would be broken (to make a better deal for farmers growing the food and encourage more environmentally sound farming practices).

(3) There would be a plentiful and healthy food supply for all people.

Clearly, the changes needed are huge and go to the very foundation of capitalism. The job of creating a just and environmentally sound food system cannot be separated from the creation of a just and environmentally sound society. As pointed out by Poppendieck (this issue), hunger is only a symptom of a larger problem—inequality and poverty. And it is critical to emphasize the problem and not to dwell on the symptom. Can the grassroots efforts for food security, growing healthy food, and direct selling of food from farms to consumers be mobilized to help in the efforts to completely transform the food system? Certainly, many sustainable agriculture and food security activists—from a diversity of perspectives—are dedicated to making substantial changes in the food system.

Yet the range of groups with a stake in the transformation of agriculture is both a strength and weakness of this movement. Family farmers, environmentalists, health- and environmentally-conscious consumers, and third world peasants all share an interest in changing the system. This will be a difficult alliance to cement on more than an intermittent basis. Family farmers, for example, are petty property owners whose political leanings are seldom consistent with reducing the prerogatives of property. Family farmers tend to be more comfortable with “right to farm” laws (which insulate producers from “nuisance” lawsuits and from many local land use or environmental regulations) and “food disparagement” laws (like the Texas law that was the basis of the Texas Cattlemen’s Association suit against Oprah Winfrey in the last year) than they are with environmental regulations or public programs to feed the hungry. Environmental groups tend to find wilderness issues and global environmental concerns most important, and do not usually give much emphasis to agriculture. Consumer movements can wield great power over the short term, but they tend not to focus on any one issue for very long. Further, there continue

to be major barriers to cooperation between farmers, environmental groups, and consumer organizations.

These groups' struggles offer many opportunities for left activity by those who believe that a complete transformation of society is needed to meet the goals of a truly just and environmentally sound food system. Their differing interests, however, raise the difficult question of how to unite the many groups that focus on individual but interrelated issues, all best approached with a unified focus.

The Moral of the Tale

Those who wish to radically transform the present agricultural-food system often focus on issues such as the proper scale of agriculture, the question of whether food should be organized in local or global systems, and the appropriate technology to be adopted. Although all of these questions are significant—and we should emphasize the importance of relatively small-scale (by today's standards), local production in agriculture, using technology appropriate to a given set of social/historical/ecological conditions—it is well to remember that such issues are essentially secondary under present circumstances to the question of the commodification of agriculture (and indeed of nature itself) promoted by the capitalist economy with only one end in mind: the production of profits. "The moral of the tale," Marx wrote in *Capital* (vol. III, chapter 6, section 2),

is that the capitalist system runs counter to a rational agriculture, or that a rational agriculture is incompatible with the capitalist system (even if the latter promotes technical development in agriculture) and needs either small farmers working for themselves or the control of the associated producers.



Most citations contained in the original texts of the following articles have been removed for this issue. For a set of reference notes for individual articles, please contact Kira Brunner, Assistant Editor, *MR*.