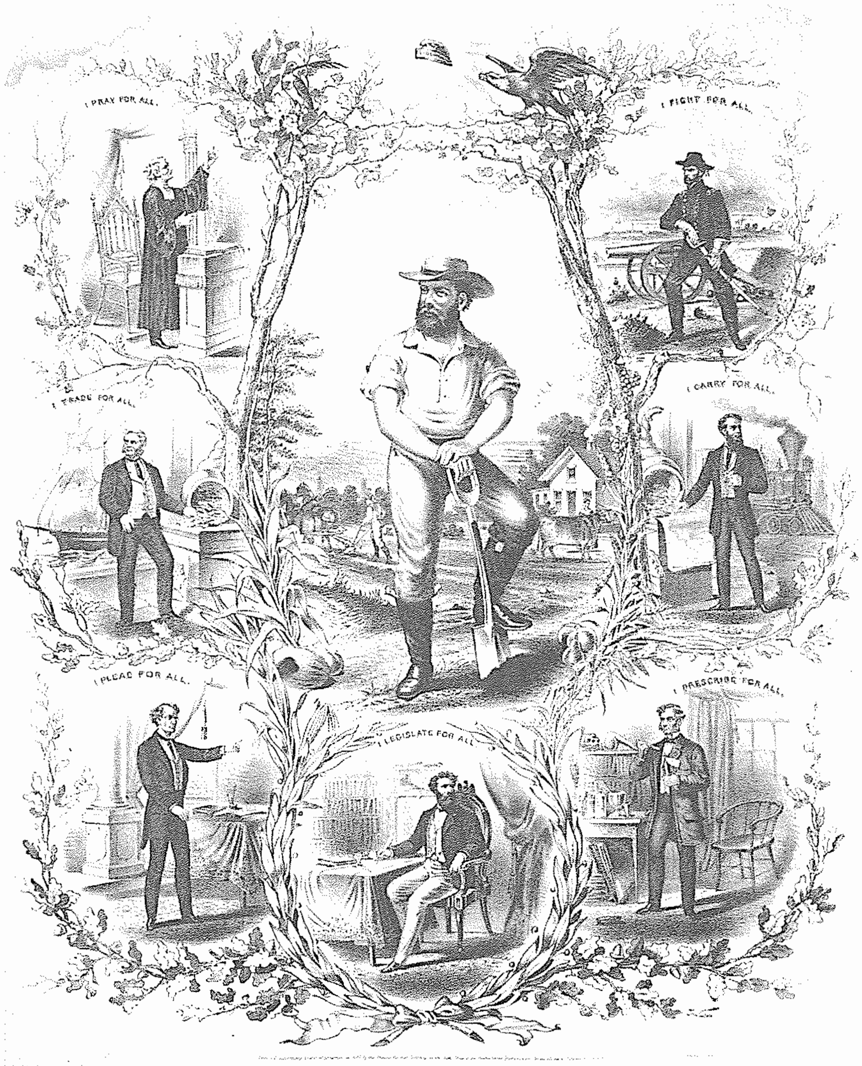

From Toilers of Land and Sea, *vol. 3 in the Pageant of America Series, copyright United States Publishers Assn. Inc.*

As this 1869 lithograph makes clear, the American farmer, after the Civil War, began to think of himself as of a group apart: Others profited from his honest labors. Indeed, not until well after World War II did a measure of economic equality, bolstered by federal crop subsidies and off-the-farm income, come to those who produced the nation's food and fiber.

Agriculture in America

As their spokesmen like to remind city folk, America's hard-working farmers have scored some prodigious successes: relatively cheap food for consumers at home, extra grain to help the famine-stricken overseas, and, last year, $41 billion in export revenues to help offset what the United States pays for OPEC oil and Toyotas. Productivity has grown five times faster in agriculture than in industry over the past five years. But the recent export push has exposed some long-term difficulties. Here economist Walter Ebeling explains the rise of U.S. agriculture; historian Tom Fulton and editor Peter Braestrup describe the new "farm issues"; and demographer Nick Eberstadt re-examines world hunger and America's role in alleviating it.

ROOTS

by Walter Ebeling

America's pre-eminence in world agriculture—its great amber waves of grain—does not stem only from nature's endowments. But nature has been generous. As an agricultural region, the heartland of America, more than one million square miles stretching from the Appalachians to the Rockies, is unsurpassed in size and quality elsewhere on this planet. The soil is so deep in many places that the plow seldom hits stone; thanks to the glaciers' movements over a million years, the ground is level enough for modern tillage; and there is plenty of rainfall except in the West, where irrigation is used.

There are superb patches of land elsewhere in America: California's Central Valley; Pennsylvania's Lancaster County (home of the Amish); the Georgia Piedmont; the Willamette Valley in Oregon. But the nation's greatest endowment lies between Denver, Colorado, and Columbus, Ohio, and its development has been to world agriculture what the exploitation of the Persian Gulf has been to world oil production.

No less important, from the beginning the land in America was not only fertile but also underpopulated. The few Indians who greeted the first English settlers of Jamestown in 1609 grew corn—and tobacco, which led the South to a commercial cash crop and to plantation agriculture, with indentured whites and, after 1690, large numbers of African slaves as labor.

Along the rivers and coasts of New England, however, there was a different pattern. The Pilgrims, and the Puritans who came ashore on Massachusetts Bay, found forests, natural meadows, and open patches that had been cleared by the Indians and then abandoned as European small pox ravaged the native tribes. The Puritans, too, learned to plant corn and raise pumpkins and beans. But New England was settled in villages. The first farmers in Connecticut, Massachusetts, and Rhode Island often shared cattle pastures and tilled scattered individual plots outside town. In New York, Pennsylvania, Delaware, and Maryland, however, the English, Dutch, Germans, Swedes, and Scotch-Irish settled on isolated individual farmsteads. And in the southern colonies, even as the great plantations grew up on the Tidewater, the poorer Scotch-Irish latecomers settled in the Piedmont on their own homesteads.

Thus, for almost 300 years, America developed two agricultural land-use styles. In the South, plantations produced cash crops for export—tobacco, indigo, rice, and then King Cotton—dependent on slavery (and later, after the Civil War, on tenantry and sharecropping) and on large acreages. In 1770, Southern tobacco led the way in all exports from the colonies, with over $1 million worth of it going to London.

In the North, aside from the Dutch *patroons'* holdings along the Hudson River, great estates were few. Indentured servants, immigrants bound to their employers for a fixed time in return for transatlantic passage, could and did disappear to start their own farms. Outside the slave-owning South, there was always too much land and too little labor for any group of landowners to develop into a European-style aristocracy.

Moreover, the very abundance of land led to a focus on *extensive* rather than European-style intensive agriculture. Then as later, the farmer was less concerned with how much each acre could yield at harvest time than with how many acres he

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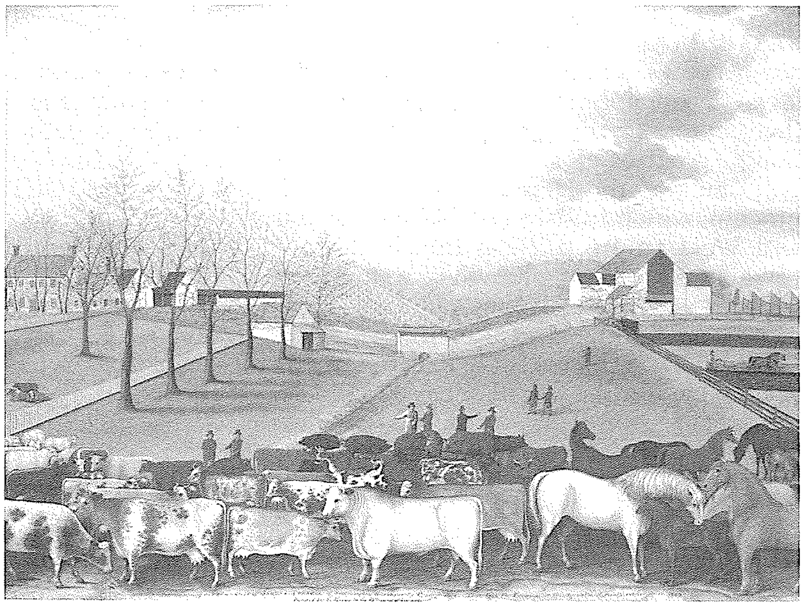


The Cornell Farm *(1936) by Edward Hicks. National Gallery of Art, Washington. Gift of Edgar William and Bernice Chrysler Garbisch.*

could clear and crop. The average farmer used crude wooden plows, pulled by oxen and horses; cut his meager grain crop with a sickle; threshed with a flail. When the soil wore out, he laboriously cleared a new patch nearby or moved West. He pastured his scrawny cattle on native grasses; he enlisted his wife and children as labor and, by trial and error, figured out which crops, which vegetables, which kinds of livestock brought in from Europe would make it in the New World. Sheep were, for a time, the mainstay of New England; in 1840, New York was the country's leading wheat producer.

After the Revolution, the abundance of land, the shortage of manpower, and the fact that farmers, most of them freeholders, made up 90 percent of the white labor force gave the concept of the independent "family farm" a special power in American political thought that still endures. Thomas Jefferson expressed it in 1785:

> We now have lands enough to employ an infinite number of people in their cultivation. Cultivators of the earth are the most valuable citizens. They are the most vigorous, the most independent, the most virtuous, and they are tied to their country, and wedded to its liberty and interests by the most lasting bonds.

The Continental Congress had offered land grants to soldiers for wartime service, and the post-Revolutionary ordinances of 1785 and 1787 provided for the sale of public land to farmers, opened up the northern Midwest to settlement, and there banned both slavery and any laws allowing the perpetuation of great estates. Other encouragements followed. The biggest one was the Homestead Act of 1862, signed by President Lincoln, which transferred 147 million acres in the Middle West and West to 1.6 million families. Each settler could get a 160-acre section (one-fourth of a square mile) for free if he lived on it for at least five years and made certain improvements. He could also buy the land after six months for $1.25 an acre. Inevitably, speculators profited, and many a new settler went broke or hungry; but the family farm was solidly established.

"Raise Less Corn, More Hell"

Indeed, the Homestead Act was only part of what Lincoln and his supporters created in the midst of the Civil War—a peaceful agrarian revolution. Congress voted to create the first federal department serving a special interest group, the U.S. Department of Agriculture. And the 1862 Morrill Act established the federally supported land-grant colleges, each with its own agricultural component. The Grange, the Farmers Alliance, and the Populists all worked for measures helpful to farmers. ("What you farmers need to do," said one Populist orator in 1892, "is to raise less corn and more *Hell*.") To the USDA and land-grant colleges were added agricultural experiment stations, the county extension agents, the Farm Credit Administration, and an array of other service agencies, all designed to promote the welfare and education of the independent farmer.

Thus, not only in Fourth-of-July rhetoric but also in law, the farmer remained something special.

Even when general social legislation was passed, most notably starting in the 1930s, farming kept its privileged status. Agriculture was exempted from Social Security, child-labor laws, minimum wages, collective bargaining rights, restraint-of-trade laws (to foster farm cooperatives), price controls, and, even in wartime, the military draft. Federal tax laws favored farmers, who also got preferred access to public lands and water. They received direct federal subsidies not given to auto makers or other manufacturers.

In short, in America, farmers gained a social status and a political power unknown to their counterparts in most other nations of the globe. Indeed, in much of today's Third World, particularly in Latin America and Africa, the farmer is viewed with disdain by the ruling elite who live in the cities. The new bureaucrats prefer to think about steel mills, fancy cars, and an up-to-date airport near the capital city. In most communist countries, "collectivized" farmers are treated, more or less, like factory hands and behave accordingly—leaving their shifts promptly at 5:00 P.M., for example. Lester R. Brown, of Worldwatch Institute, describing lackluster Soviet farming in *Science* magazine, noted pointedly that "Marx was a city boy."

Mechanizing with Horses

Another factor has helped to shape U.S. agriculture—technological innovation, coupled with public education and quick communication. During the new Republic's first few decades, there was little innovation on the average farm in the North. Eli Whitney invented the cotton gin in 1793, helping to make cotton the South's chief cash crop. But in the North, essentially, self-sufficient farming continued until early in the 19th century. Farm families filled their own needs for clothing, tools, soap, and food. And life was not easy.

Agricultural innovation by and large came from the top down. It was fashionable for the leaders of the new nation to take an interest in agricultural promotion. George Washington experimented with mule breeding, and Thomas Jefferson tested a new moldboard plow. Improved strains of hay, including timothy and alfalfa, were imported, mostly by well-to-do farmers, who also formed the agricultural societies. The first farm journal, *Agricultural Museum*, came out in 1810. In 1819, U.S. consuls overseas were told by the Secretary of the Treasury to collect seeds, plants, and agricultural inventions from abroad and to send them home.

But the main thrust in innovation in America was to develop technology for opening up more land with less labor. Thus, in 1837, John Deere and Leonard Andress began manufacturing steel plows needed to open up the tough prairie sods of the Midwest—reducing requirements for animal power by at least one-third. Slowly the McCormick reaper, threshing machines, and mowers—all complicated, horse-powered mechanical devices—came into use. Soon after the Civil War, the average American farmer had stopped harvesting his crop by hand. Horse power or mule power made possible the westward push of the wheat belt. And by 1890, most of the potential for horse-powered machinery had been established. The transition to the gasoline tractor, first developed in 1892, took several decades. Not until 1954 did the number of tractors on all farms in America exceed the numbers of mules and horses, with the South behind the rest of the country.

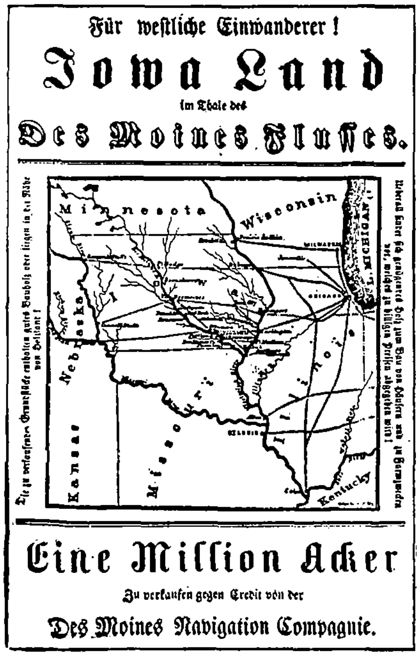
After the Civil War, the Department of Agriculture, the land-grant colleges, and the county extension agents led the way in developing and encouraging higher-yielding, disease-resisting grain crops, new irrigation techniques, meatier livestock. Under the New Deal, rural electrification and agricultural credit, in particular, helped to modernize the farm sector. Private industry helped develop labor-saving machinery, chemical fertilizers, pesticides, and herbicides. The onset of World War II and Washington's demand for all-out production accelerated the growth of capital-intensive farming and higher productivity.

The results were dramatic. In 1930, it took 15 to 20 man-hours of labor to produce 100 bushels (on two and one-half acres) of corn. In 1975, it took 3½ man-hours to produce the same amount of corn—on one and one-eighth acres. The incentives for the farmer to borrow money and invest in the new technology were clear.

For most of America's history, there was an increasing demand in the growing cities and towns at home and in industrializing Europe for what the farmer could sell (if not always at prices that paid off his debts). Not until the 1890s did farm products drop below even 75 percent of all U.S. export sales. This agricultural surplus enabled the United States in its early days to buy the European factory machinery and the other finished goods that it needed to develop an industrial base.

Essential to this export growth was transportation. The Erie Canal (1825) brought wheat from the Ohio Valley and western New York State by barge to the Hudson River and then to the Atlantic coast. The federal encouragement through land grants to the railroad companies to open up the West after the Civil War—linking the West coast to the East in 1869 and adding 136,000 miles of track from 1860 to 1890—provided a major impetus to farming. Without this network, essentially farm-to-market transportation, the heartland would have been reduced to subsistence farming except along the major navigable rivers. Refrigerated freight cars, beginning with the "Tiffany" cars in 1888, enabled Westerners to ship produce to the East and ultimately allowed Florida orange growers to ship their fruit north. It made it possible to ship beef from Chicago to New York and apples from New York State to Florida.

But even as the domestic markets grew, fed by immigration and natural population increase, American farmers were increasingly at odds with the bankers, traders, middlemen, and



To attract German immigrants, the Des Moines Navigation Co. advertised "one million acres" of Iowa land between Keokuk and Des Moines, for sale in parcels on credit terms.

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suppliers. Buying land and the new horse-drawn machinery led many of them into debt. They were at the mercy of market competition and of volatile changes in prices. After the Civil War, farmers began to support the Greenbackers and Populists—attacking "hard money," high freight rates, and monopolies of all kinds.

At the same time, farmers began to become a minority. By 1880, farm workers and farmers accounted for less than half the nation's labor force, even as a fresh influx of Scandinavian immigrants helped to thicken the settlement of the Great Plains. The farm population, all told, peaked at 32 million in 1910; the number of farms peaked at 6,454,000 ten years later. World War I brought a great boom in demand for food. When the war boom ended, the overextended farmers suffered from a slump that did not end for two decades. And a fresh exodus from the land to the cities began.

The Great Depression of the 1930s, which struck hard at all sectors of American society, was a turning point for American agriculture. Under Franklin Roosevelt's New Deal, the federal government stepped in to prop up farm income, save the family farm, and improve soil conservation and management practices

—particularly after the harsh experience of the Dust Bowl, when black dust clouds from the parched Great Plains blew east and hovered over Washington. Acreage and marketing quotas were imposed to curb production; surpluses were purchased by the federal government; price supports were begun. "The American farmer," FDR asserted, "living on his own land, remains our ideal of self-reliance and spiritual balance."

Feeding Hogs in Taiwan

Debates over the costs and benefits of such efforts went on for three decades. There was no question that federal intervention, however well intentioned, favored some farmers over others. Some got no subsidies, notably livestock farmers. Growers of cotton, wheat, corn, tobacco, and rice were paid ($709 million in 1939 alone) to keep marginal cropland out of production —and, naturally, bigger farmers with the most acreage benefited the most. After World War II, acreage controls failed to end surpluses; indeed, land couldn't be taken out of production fast enough. New high-yielding strains of corn and wheat used in conjunction with fertilizers, pesticides, and herbicides pushed output even higher. It seemed that U.S. agriculture was simply too productive for its own good. Indeed, in 1953, the U.S. Commodity Credit Corporation acquired 486 million bushels of wheat—41 percent of that year's crop, and a record.

During the 1960s, Washington began to distribute much of this surplus to the needy at home via food stamps (starting in 1964) and overseas via Public Law 480 "give-aways" to such countries as India, South Korea, Taiwan. In time, as many of these countries gained economically, their people began to demand beef and pork. Producers of cattle and hogs in West Germany or Japan or South Korea needed feed grains; the United States's surpluses began to ebb.

During the '70s, while price supports stayed in effect, federal production controls eased; there was enough demand around the world to buy up whatever feed grains the U.S. farmer could produce. In 1972, the United States found itself selling soybeans, corn, and wheat to the USSR—too much of it—and unsubsidized U.S. cattle and hog farmers found themselves paying higher feed bills as a result.

Even as the crop surpluses declined, the individual farmer, pressed by inflated costs of machinery, labor, and other materials, had to rent or buy more acreage just to stay even with the bank; the price of farm land went up as it always does in inflationary times. Many farmers found themselves, after a period of expansion and relative cost-price stability, deeply in debt by 1975. Farm prices went up more slowly under the stagflation of the 1970s than did the cost of inputs. And while Washington now put a floor under the prices paid to some farmers and subsidized dairy farmers, beef and hog farmers and vegetable growers had no such relief. The bigger farms grew bigger and more mechanized; to survive, the smaller farmers or their wives worked off the farm. Indeed, this trend had accelerated since 1967 when, for the first time, off-farm income surpassed farm income for all people living on farms. Without that rising off-farm income, many more of America's small and medium-sized farm operators would have been forced to quit the land altogether.

Thanks to America's special history, we have a central government that has long served the farmer without seeking to "manage" him. Partly as a result of our great natural endowment, and of shifting economic forces, we have a very small, highly efficient farm sector. Four percent of the U.S. population provides food and fiber for the rest. The 510,000 largest farms, almost all of them family-operated, produce 64 percent of the total farm output. Overall, the one-billion-acre U.S. farm sector is gradually becoming more capital-intensive, more energy-intensive, more heavily in debt, and freer of surpluses (except in the dairy industry, where the average cow now produces about 12,000 pounds of milk a year—twice the level in 1954). Diversified farming, particularly combination livestock-and-grain farming, is on the wane.

Lastly, the political power of the farmer and the strength of the old congressional "farm bloc" has greatly declined. The "farm vote" is now simply too small to be decisive in most states. And, since the early 1970s, other players have gotten into the act: the nutrition lobby; exurban real estate developers; the hunger lobby; the environmentalists worried about pesticides, herbicides, and stream pollution; occupational safety inspectors; activists interested in minority rights; the State Department. No longer is Jefferson's "cultivator of the earth" considered the bulwark of the Republic, even as the recent back-to-the-country movement among city folks indicates his enduring mythic appeal.