BOOKS: ECONOMICS

Unbalanced Bounty from America's Farms

C. Peter Timmer

I am not old enough to remember the first tractor on the farm in Ohio where I grew up, but I do remember the departure of the last two draft horses, Sugar and Domino, and the transition to mechanical agriculture. In his definitive history *American Agriculture in the Twentieth Century*, Bruce Gardner accurately captures my personal recollections over the second half of this period. Most of the interesting economic analysis, made possible by vastly better data, focuses on the period after 1950. But the earlier history remains relevant to poor countries facing food insecurity as they seek the path of higher agricultural productivity. I spend much of my time advising such countries how to get on that path, and a salient point of my message is that they avoid the kinds of farm policies the United States has pursued since the 1930s. Therefore, I find a substantial tension in this book, between the statistical story of amazing productivity growth on U.S. farms and the policy story of how that growth came about and who benefits from it.

American Agriculture in the Twentieth Century
How It Flourished and What It Cost
by Bruce L. Gardner

Harvard University Press, Cambridge, MA, 2002. 400 pp. $49.95, £33.50, €49.95. ISBN 0-674-00748-4.

Gardner is keenly aware of this tension and is almost uniquely situated to deal with it. Trained academically at both a land-grant university (Illinois) and a university that is the leading producer of general economists interested in agriculture (Chicago), Gardner has served as the "aggie" on the Senior Staff of the Council of Economic Advisors and as the "economist" Assistant Secretary at the U.S. Department of Agriculture. He is one of the few analysts who can see the sector from both inside and outside.

Three major themes, each with a point and counterpoint, dominate Gardner's history: the huge gains in the sector's productivity, the changes in income distribution in rural areas, and the role of government intervention into U.S. farming. Ever the careful econometrician, Gardner devotes considerable space to measurement problems—for example, the changing definitions of things as basic as what a farm is—and laments the poor statistical base for analyzing trends before 1950.

None of these problems, however, obscures the remarkable rise in agricultural productivity. The change began sometime between 1935 and 1940 and was sustained at an astonishingly stable pace through the end of the century. By 2000, U.S. farmers produced twice their 1930 output with only one-third the number of farms. Because an index of inputs remains roughly constant through the period, the productivity gains are impressive indeed.

Gardner devotes much of the book to understanding the sources of these productivity gains and their impact on farmer welfare and on the rest of the economy. Despite the author's best efforts to sort through the literature and his own original econometric studies at the state and county level that seek to identify the sources, they remain elusive and controversial. Gardner's summary of what made the productivity growth and rising incomes of farm households possible is succinct:

> Four explanatory factors have received sustained attention: (1) the development and diffusion of new agricultural technology; (2) the expansion and commercialization of agricultural commodity markets; (3) the integration of farm people into the growing nonfarm economy in the post–World War II period, especially through increased participation in the nonfarm labor market; and (4) government policies, of three distinct types—(a) regulatory institutions that began to be introduced in the first decade of the twentieth century, (b) public investment in infrastructure (irrigation, transport, communication, research, education); and (c) the commodity programs introduced in the 1930s.

Gardner believes it is not possible to reliably weight the relative contributions of these sources of agricultural change.

The counterpoint to the gains in physical productivity (bushels per acre, for example) has been an unrelenting drop in the agricultural terms of trade. When farm output is measured as value added to the U.S. economy (i.e., the worth to consumers), productivity has been declining since the early 1980s. Whatever its sources, one can argue that the growth in U.S. farm productivity has been an increasingly hollow victory.

The book's second major theme involves the changes in income distribution in rural America, mostly caused by the integration of the rural economy into the nation's ten trillion dollar economy. Many readers will be surprised to learn that farm and rural household incomes have clearly converged with those of nonrural households. It took a long time to close the gap, but parity was achieved nearly everywhere in the 1990s. Rural poverty is no longer a farm issue.

The counterpoint here is the overwhelming concentration of commercial agricultural activity in the hands of the largest farms.

Highly productive acreage.

Gardner notes that farms with annual sales of farm products under $100,000—80% of all farms in the late 1990s—earn more than 90% of their household incomes from off-farm sources. He comments,

> This in itself means that the returns from agricultural production will be heavily concentrated in the larger farms; indeed in 1996 farms with more than $250,000 in sales (less than 10 percent of all farms) accounted for more than 85 percent of net cash income.

For the vast majority of farm households, farming is almost a hobby rather than an important business for generating household income. It is not clear that the U.S. Congress understands these numbers.

Congress is at the core of the book's third principal theme. What have been the roles of government policy in causing, or responding to, the vast changes in productivity, rural incomes, and role of agriculture in our economy? The controversies here tend to focus on the commodity programs, because the regulatory institutions and investments in infrastructure are seen by Gardner as earning reasonable economic payoffs (an assessment that glides over irrigation subsidies and other problems). Gardner can find no clear evidence that the commodity programs begun in the Great Depression of the 1930s and still maintained—even aggressively in the 2002 Farm Bill, which passed after this book went to press—

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have had any significant impact on changes in productivity or farm incomes. As an economist, Gardner wants to say they are very wasteful.

But the counterpoint claims such programs have shown American democracy at its messy but functional best. Thus, Gardner ends his book:

> The results often make the seeker after rationality in economic policy cringe. But if one believes that the overall record of U.S. agriculture has been a success story, and if the government's role has been generally supportive, one's criticisms should be tempered accordingly. Indeed we may reasonably see the outcome as one of democracy's positive achievements.

Within the narrow confines of American politics, this is an appealing view. But it begs two larger issues. If pushed very far, the view implies that no policy is bad so long as it is passed by Congress and signed by the President. Gardner, a good policy analyst, certainly does not intend that message. And the impact of U.S. farm policy on poor countries and on the skewing of global trade (and global income distribution) needs to be considered in the reckoning. Such an analysis would result in a very different book than the one Gardner has written. Its message would not be nearly so optimistic.

BOOKS: AGRICULTURE

Reconnecting Farms and Ecosystems—If It Pays

Andrew Bent

Vast tracts of land in many countries are devoted to commercial agriculture. That land provides us with sustenance, but is it a nice place to be? Do our agricultural systems do enough to minimize pollution, promote stable jobs and communities, or sustain wildlife habitats and attractive landscapes? Depending on one's criteria, modern farming can be characterized as a booming success or a crisis—or both. But given that so much land is devoted to growing our crops, it is relevant for all of us to wonder how we might use this land better. *The Farm as Natural Habitat* provides excellent food for thought on the subject.

The central thesis of this edited set of essays is that our society's move toward industrialized agriculture is creating "ecological sacrifice zones." We make food on farms, and when we want nature we drive somewhere else to find it. Native plants and animals that require bits of habitat adjacent to agricultural lands are being pushed out, and pollutants are spreading well beyond farm borders. The thesis is overtly environmentalist, but the book avoids ready pigeonholing because it is consistently loyal to the personal and economic realities of farmers. The authors, each from their own perspective, explore one unifying question: how can we change farming practices to improve environmental values in a way that works for farmers and their families?

The Farm as Natural Habitat Reconnecting Food Systems with Ecosystems
by Dana L. Jackson and Laura L. Jackson, Eds.
Island, Washington, DC, 2002. 312 pp. $50. ISBN 1-55963-846-X. Paper, $25. ISBN 1-55963-847-8.

What are the finer issues at hand? Nitrogen and other "non-point source pollutants" are one place to start. Excess corn fertilizer is damaging large segments of the Mississippi River watershed, and manure from confinement-based livestock operations (cows, pigs, poultry) is a serious toxic waste liability. The book suggests that this problem would be greatly diminished by a return to family farms that raise animals in integrated rotational grazing systems, with less reliance on corn and soybeans. The manure produced would be reused on-site, and field drainage could be modified to increase retention and slow release of runoff water. More balanced farm and regional ecosystems would result.

The rotational grazing recipe, however, runs counter to overwhelming production trends that are driven in part by fierce economic pressures. Feeding millions of people is an industrial enterprise, and the system of corn and soybean production to feed confined livestock optimizes productivity in many settings. But at what present and future costs? In the United States, we have the luxury of asking if cheap food production is the only part of the equation that needs to be maximized. The authors argue for broader ecological and social valuations; others will reply that maximally intensive agriculture feeds the world and also frees other land for purposes such as nature preservation. These are not easy issues to resolve, but the book successfully makes the point that alternative options should receive more attention. The contributors are similarly provocative when they address issues of soil erosion, small-farm viability, and, most prominently, the preservation or creation of "wild" lands on farms.

A principal claim of the book is that industrial-style agriculture does not have to be inevitable. In the closing chapter, George Boody drives home the point that agriculture is a public "good" in the economic and sociological sense. The United States and other countries have a long history of public subsidies that foster desirable farm practices through legislated economic incentives, and the book makes a good case for stronger action in this regard. Programs such as the new U.S. Conservation Security Program, which will reward growers who furnish ecologically desirable outcomes, such as lower nitrogen runoff or better wildlife habitats, represent steps in the right direction.

One of the most appealing aspects of *The Farm as Natural Habitat* is its variety; the authors discuss farming methods, nature philosophy, farm policy, sociology, conservation biology, agribusiness economics and other diverse subjects. Their level of focus shifts fluidly among national, regional, community, single farm, and personal. Specialists of many stripes will be stimulated by inputs from other disciplines, and the writing style and chapter lengths are friendly to all readers. The editors, Dana and Laura Jackson, have created a coherent whole through their selection of topics and coordination of authors. They also provide excellent prefatory and summarizing pages at multiple junctures.

Retaining room for the wild.

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Minor segments of the book can be criticized as too anecdotal or for taking knee-jerk anti-technology stances, and almost all of the book is idealistic. But most chapters are very instructive in drawing models for success that are based on first-hand experience. Rhonda Janke, for example, describes how "whole-farm planning" can help farmers to self-evaluate their operations and identify specific areas for improvement. She emphasizes the incentives needed to get farmers to actually do this. Beth Water-

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