

## **THE CHANGING SCALE OF AMERICAN AGRICULTURE.**

By John Fraser Hart. xvi and 287 pp.; maps, diagrs., ills., bibliog., index. Charlottesville and London: University of Virginia Press, 2003. \$37.50 (cloth) ISBN 0-8139-2229-1.

Where have all the farmers gone? Farms and farm fields are getting larger while the number of farm families declines. The look of the land is changing. Fences, windmills, silos, dairy barns, chicken coops, pig stys and corn cribs have given way to hangar-like metal machine sheds and feed mills with spidery elevators and conveyor systems. These and other demographic and landscape changes are the result of a reorganization of food production in the United States that many describe as the third agricultural revolution. Routine chores have been mechanized, governmental regulations have increased, university and corporate research establishments have created new herbicides, insecticides, fertilizers, cloned animals and modified plants by the inter-species transfer of genetic material. At the center of this whirlwind of change have been the basic units of agriculture the farm and farmer.

In the late 1940s farmers grew a variety of crops and raised a range of animals for consumption and sale. They were shifting to tractors and other forms of self-propelled machines, but still depended on members of the household to carry out the basic chores and attempted to produce most of the food they needed. According to the Census of Agriculture there were 5.4 million farms and the average farm sold goods worth \$4,097. The 1997 census reported average farm sales to be \$102,970. Farmers were specialized in either crops or livestock and bought everything they needed to sustain their operation and themselves. The number of farms had declined to 1.9 million. However, the total crop land declined only ten per cent from 478 to 431 million acres.

Professor Hart's authoritative contribution to our understanding of this revolution consists of three parts. He explains how and why the basic unit of production has dramatically increased in size, he presents to us the entrepreneurs who make the system work, and he depicts the new regional patterns of crop and livestock production. Some of the men he introduces to us were instrumental to the changing scale of production. Others did not shape the events around them but responded quickly to the dynamics of the market and technology and kept the process moving forward. In the author's words:

“Entrepreneurs have driven this change in scale. Many people seem to assume that things just happen, but things do not just happen, they happen only because someone makes them happen. Things happen, places are changed, and new systems are created by the decisions and by the initiatives of individual entrepreneurs.”

Hart's opinion of the process of innovations is based on over seventy years of observing real people and places, as well as countless hours spent poring over statistics and maps.

The backbone of the production of meat and eggs in the United States is the animal feed business. In the 1950s and 1960s feed companies and local operators of grain elevators realized that their low cost product could be transformed into high-profit protein by effectively integrating the various elements of primary, secondary, and tertiary economic activities associated with food production. They did this by contracting with farmers to raise uniform animals and birds provided by the feed company. The company harvests the animals on its schedule and is therefore able to guarantee a standard product on a predictable schedule. In turn the farmers with the rearing facilities are guaranteed a return on their investment and labor. In some cases entrepreneurial farmers took over feed companies and became involved in processing animals and marketing the meat. This process produced famous brand names such as Tyson, Monfort, Perdue, and Jennie-O, but most of the entrepreneurs featured in the book are not known outside their home areas. Nonetheless they all share the ability to see the future and the courage to act on their vision. The key to the success of leaders in the food business was their ability to consolidate small and separate production, processing, and distribution organizations into large and integrated systems.

It seems the continuing role of entrepreneurs is limited by the process of succession. Like the innovators of the past all the large scale operators in agriculture must either sell their creation to some even larger enterprise or find a way to enable family members to take control. The land owned by hundreds of

family farm corporations has passed smoothly between generations, but most of the large integrated meat production businesses have been taken over by corporate management.

Not only has the scale of agriculture changed but also the regional patterns of agriculture have been restructured. Hart calls the present pattern the “new tripartite macrogeography.” Today we have a cash-grain region in the Midwestern Heartland stretching from Ohio on the east into Nebraska on the west. Around the periphery of this core are found concentrations of specialized livestock-producing areas located some distance away from large populations. Finally, in the coastal states there are areas that are specialized in the growing of fruit, vegetables, landscaping plants and cotton. These regions are tightly connected by the transportation and communication systems. Vast quantities of feed grains are shipped to the animal production zones each day to feed the millions of animals destined for the tables of American consumers. The grain producing core has some of the world’s most fertile soils and an excellent climate for the production of corn and soybeans. The farms in this region have been growing steadily in response to the mechanization of agriculture that began over a century ago. Here farmers not only expanded their operations they gave up the small scale production of livestock. Grain produced in this region is transported to an archipelago of specialized live-stock production zones. Hart argues that this pattern of production areas reflects the location of entrepreneurs, “because they have not been developed in other areas that seem just as suitable as the areas in which they have been developed.” The entrepreneurs in these areas developed large scale dairies and farms for the production of beef cattle, hogs, chickens and turkeys.

In the chapter titled “Critics” Professor Hart summarizes some of the environmental and social issues associated with large scale agriculture, but does not present a comprehensive discussion of the issues. He does make it abundantly clear that in the future animal farms will be located some distance away from concentrations of people who object to the odiferous manure, dust and drift of chemical sprays.

This book enables us to understand a critical time in the transformation of the farm, the basic unit of agriculture. Hart believes the consolidation process will continue writing, “The future of American agriculture is in the hands of those who realize that they must embrace change instead of trying to halt it, the entrepreneurs who have learned that they need to add a zero or two to the way they think about farming. The farm that seems large in 2002 will seem small in 2022.”

*The Changing Scale of American Agriculture* should be on the reading list of all geographers. It is a long awaited balance to the study of origins and dispersals of domesticates because it informs us of how modern farmers are changing the face of the earth and our food ways. The book is a treat to read. The author’s erudite style enables him to convey a sense of the places he studied and the great pleasure he derives from his craft.

- - David A. Lanegran, Macalester College