

TYPES OF AGRICULTURE

10.4 Comparing Subsistence and Commercial Agriculture

- Subsistence agriculture is characterized by a high percentage of farmers, small farms, and few machines.
- Commercial agriculture has a small percentage of farmers, large farms, and many machines.

Subsistence and commercial agriculture are undertaken for different purposes. In LDCs most people produce food for their own consumption. Some surplus may be sold to the government or to private firms, but the surplus product is not the farmer's primary purpose and may not even exist some years because of growing conditions. In commercial farming, farmers grow crops and raise animals primarily for sale off the farm rather than for their own consumption. Agricultural products are not sold directly to consumers but to food-processing companies.

FARM SIZE

The average farm size is relatively large in commercial agriculture, especially in the United States and Canada. U.S. farms average about 171 hectares (444 acres), whereas in LDCs the average farmer has only 0.7 hectares (1.7 acres).

Large size is partly a consequence of mechanization. Combines, pickers, and other machinery perform most efficiently at very large scales, and their considerable expense cannot be justified on a small farm. As a result of the large size and the high level of mechanization, commercial agriculture is an expensive business. Farmers spend hundreds of thousands of dollars to buy or rent land and machinery before beginning operations. This money is frequently borrowed from a bank and repaid after the output is sold.

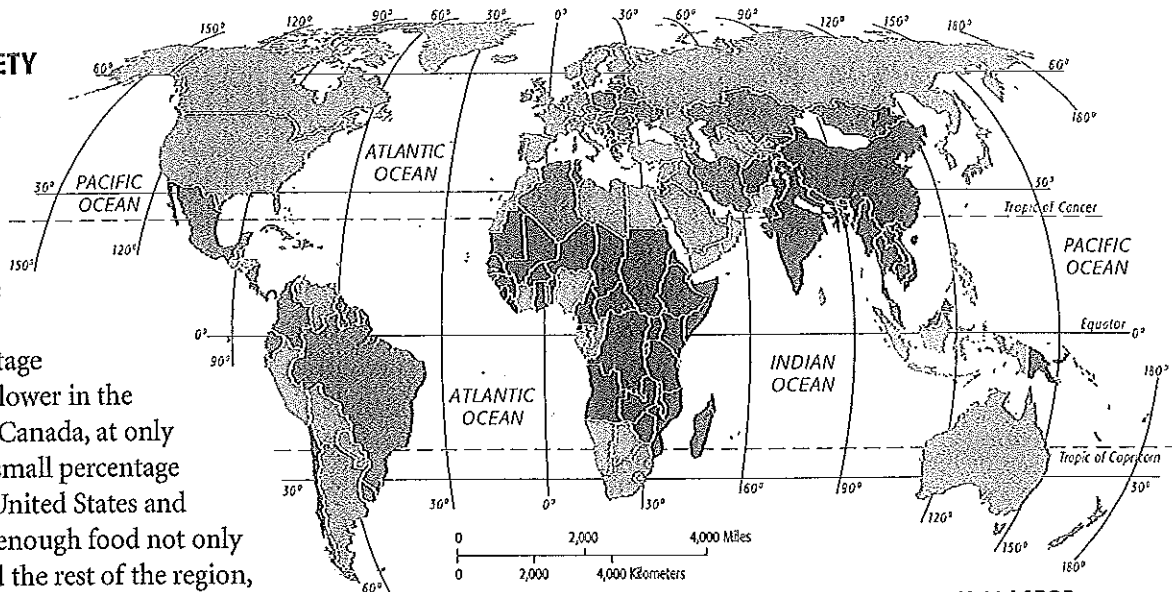
Although the United States currently has fewer farms and farmers than in 1900, the amount of land devoted to agriculture has increased. The United States had 60 percent fewer farms and 85 percent fewer farmers in 2000 than in 1900, but 13 percent more farmland, primarily through irrigation and reclamation.

Most commercial farms in MDCs are family owned and operated—98 percent in the United States. Commercial farmers frequently expand their holdings by renting nearby fields. Nonetheless, commercial agriculture is increasingly dominated by a handful of large farms. In the United States, the 29,000 largest farms comprise only 1.4 percent of all U.S. farms, but they account for 48 percent of all agricultural sales. At the other extreme, one-half of the 2 million U.S. farms generate less than \$5,000 per year in sales.



PERCENTAGE OF FARMERS IN SOCIETY

In MDCs less than one-tenth of the workers are engaged directly in farming, compared to more than one-half in LDCs. The percentage of farmers is even lower in the United States and Canada, at only 2 percent. Yet the small percentage of farmers in the United States and Canada produces enough food not only for themselves and the rest of the region, but also a surplus to feed people elsewhere. The number of farmers declined dramatically in MDCs during the twentieth century. The United States had about 6 million farms in 1940 and 4 million in 1960; the number has stabilized during the past two decades at around 2 million. Both push and pull migration factors have been



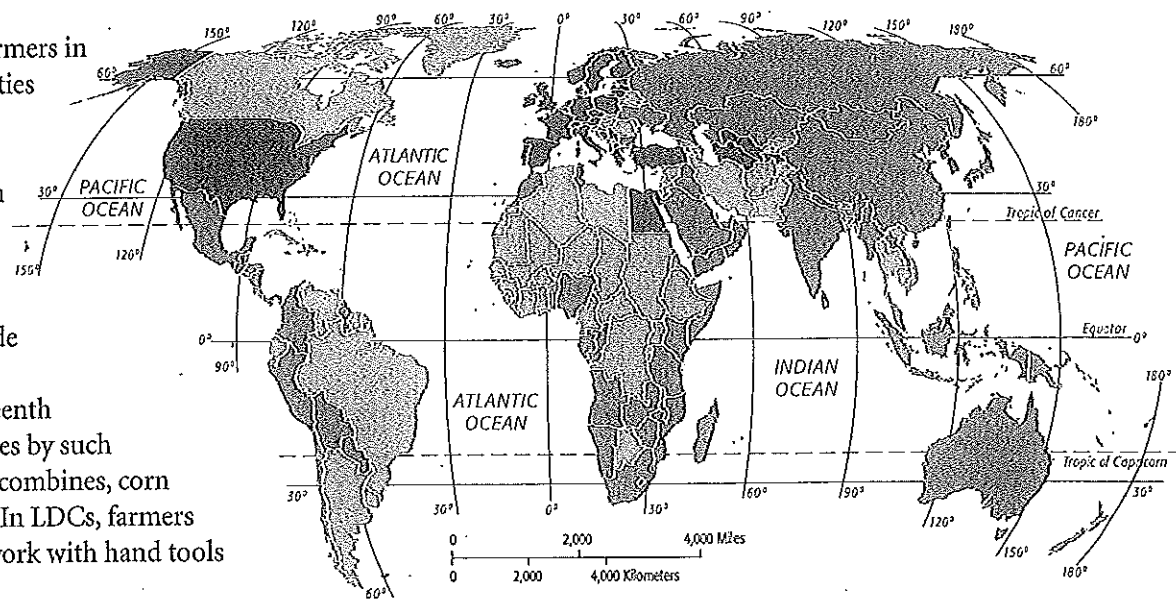
responsible for the decline: people were pushed away from farms by lack of opportunity to earn a decent income, and at the same time they were pulled to higher-paying jobs in urban areas.

10.4.1 LABOR FORCE ENGAGED IN AGRICULTURE
Percent

- 50 and above
- 25.0-49.9
- 10.0-24.9
- below 10

USE OF MACHINERY

A small number of farmers in more developed societies can feed many people because they rely on machinery to perform work, rather than relying on people or animals. The first all-iron plow was made in the 1770s and was followed in the nineteenth and twentieth centuries by such machines as tractors, combines, corn pickers, and planters. In LDCs, farmers still do much of the work with hand tools and animal power.



increase productivity. Experiments conducted in university laboratories, industry, and research organizations generate new fertilizers, herbicides, hybrid plants, animal breeds, and farming practices, which can produce higher crop yields and healthier animals. Global positioning system (GPS) units determine the precise coordinates for spreading different types and amounts of fertilizers. On large ranches, GPS is also used to monitor the location of cattle.

10.4.2 TRACTORS PER 1,000 HECTARES OF CROPLAND

- 25 and above
- 10-24
- 1-9
- below 1

Transportation improvements have also aided commercial farmers. The building of railroads in the nineteenth century, and highways and trucks in the twentieth century, have enabled farmers to transport crops and livestock farther and faster. Cattle arrive at market heavier and in better condition when transported by truck or train than when driven on hoof. Crops reach markets without spoiling. Commercial farmers use scientific advances to