# Ch. 9 Agriculture

Key Issue 1: Where did agriculture originate?

*Agriculture- the deliberate modification of Earth’s surface through cultivation of plants and rearing of animals to obtain sustenance or economic gain.*

Before ag, humans existed through hunting and gathering, meaning the collection of food on a daily basis. About 250,000 people still engage in hunting and gathering; these people live in isolated areas of the Arctic, Africa, Australia, and S. America. The first form of agriculture was *vegetative planting- the reproduction of plants by direct cloning from existing plants, i.e. cutting roots/stems.* Later, *seed agriculture- the reproduction of plants through annual planting of seeds that result from sexual fertilization.*

Vegetative planting originated in three primary hearths: S.E. Asia, West Africa, and northwest South America.

Seed ag also originated in several primary hearths: west India, north China, Ethiopia, south Mexico, and north Peru.

*Subsistence ag- the production of food primarily for consumption by the farmer’s family.*

*Commercial ag- the production of food primarily for sale off the farm.*

Five features distinguish commercial ag from subsistence:

 -Purpose of farming: subsistence ag is to produce food for own consumption. Commercial ag is produced for sale to others.

 -Percentage of farmers: in MDC’s less than 5% of workers are farmers, compared to 55% in LDC’s. The farmers in MDC’s are typically commercial, whereas the LDC farmers are subsistence.

 -Use of machinery: Commercial ag makes heavy use of machinery where subsistence ag uses mainly hand tools and animals.

 -Farm size: Commercial farms are much larger than subsistence farms. The commercial farms have to be larger in order to pay for their heavy machinery, and to make a profit.

 -Relationship of farming to other business: Commercial farms are commonly part of an *agribusiness- the many facets of food production, not just isolated family farming.*

Key Issue 2: Where are agricultural regions in less developed countries?

The three primary types of ag in LDC’s are:

*Shifting cultivation- characterized by* slash-and-burn ag- the clearing of land by slashing vegetation and burning debris*, and using a select field (swidden) for only a few years before leaving it fallow for many years to recover the soil.*

Shifting cultivation is practiced most commonly inthe tropics and other regions where soil quality is relatively poor for supporting ag. The process works well with few people, but grows inefficient as the number of people increases and more fields must be left fallow longer. Shifting cultivation has been looked down upon in recent years as the importance of the rain forests to the Earth’s ecosystem becomes more apparent.

*Pastoral nomadism- a form of subsistence ag based on the herding of domesticated animals. Primarily practiced in the large belt of arid and semiarid land that includes north Africa, the Middle East, and parts of Central Asia. About 15 million people are pastoral nomads; they sparsely occupy 20% of Earth’s land surface.*

The animal that the nomad chooses to herd depends on the climate, and on cultural preferences. Some nomads practice *transhumance- the seasonal migration of livestock betwixt mountains and lowland pasture areas.* The future of pastoral nomadism is grim, as govt. increasingly confine the nomads to areas that cannot be irrigated or that lack valuable raw materials.

*Intensive subsistence ag- the form of ag used in areas of high density such as East, South,*

*and Southeast Asia. It is characterized by high efficiency farming practices that yield a large number of crops per small amount of land.* The intensive ag in Asia is subdivided into “wet rice dominant” and “wet rice not dominant”. Aside from the obvious difference in what is grown, the two classifications are quite similar. They each use the land intensively, primarily using human power with some animal and hand tool assistance. In some regions, crop rotation may be practiced, as well as *double cropping- obtaining two harvests from one field in one year.*

Key Issue 3: Where are agricultural regions in more developed countries?

The methods of farming typically found in MDC’s are:

*Mixed crop and livestock farming* is common in the U.S. west of the Appalachians and in much of Europe from France to Russia. The most distinctive characteristic of this type of ag is the integration of crops and livestock. Most of the crops are fed to animals rather than humans. Typically in a mixed farm, nearly all of the land is used for crop growing, but more than 75% the profits come from the sale of animal products. Crop rotation is actively used in mixed farming. The choice of crop grown on the farm varies widely, but two of the most frequent are corn and soybeans.

*Dairy farming* is the most important type of commercial ag practiced on farms near the northeast U.S., southeast Canada, and northwest Europe. Dairy farms must be nearer their market areas than other products because their product spoils quickly; *milkshed- the ring surrounding a city from which milk can be supplied without spoiling.* Improvements in transportation have increased the range of dairy farms, but they are mainly still located near large urban areas. Those dairy farms that are farther from the cities tend to sell their product to processors who make butter, cheese, etc, because these products keep longer than milk.

*Grain farming* is typically done in the Great Plains states of the U.S. The U.S. is by far the world’s largest producer of grain. W/in the U.S, grain is grown in three areas, the winter wheat area (*the crop is planted in the autumn and develops a strong root system before growth stops for the winter, and is harvested in the early summer)* like Oklahoma, Kansas, Colorado; the spring wheat belt (*the crop is planted in spring and harvested in the late summer)* in the Dakotas, Montana; and the third important area is in the Palouse region of Washington state. Wheat is an important crop because it is highly exportable and is a source of economic and political strength for its largest producers, like the U.S. and Canada.

*Livestock ranching* is the commercial grazing of livestock over an extensive area. In

MDC’s it is practiced in semiarid lands where the vegetation is too sparse and the soil too poor to support crops. The cattle were taken to market via cattle trails and railways in the 19th century, but more recently by semi-trucks and interstate highways. Cattle ranching is done in other parts of the world where wide open lands are available, and are better suited to supporting cows than crops. Regardless of the region, ranching has followed a similar pattern across the globe. Initially it is the herding of cattle over open ranges, then ranching transforms into fixed farming by dividing the open land into ranches. Some ranches are converted into farms as the countryside develops and irrigation is more available. The remaining farms must experiment with new breeding and feeding processes to enhance the value of their cows.

*Mediterranean ag* exists mainly in the lands that border the Mediterranean Sea in S. Europe, N. Africa, and W. Asia. It has spread to parts of California, Chile, South Africa, and Australia as well. Most of the food grown in this style of farming is for human consumption and is typically of high value. *Horticulture- the growing of fruits, vegetables, and flowers* forms the base of Med. ag.

*Commercial Gardening and Fruit Farming* is the main farming found in the U.S.

southeast. It is characterized by *truck farming- growing many of the fruits and*

*vegetables demanded in more developed societies.* These farms are highly efficient and make use of machinery and cheap labor in every facet of the process.

*Plantation farming* is found in the tropics and subtropics. *Plantation- a large farm that specializes in one or tow crops, typically cash crops.* These types are farms are isolated in sparsely settled locations and are thus quite self-sufficient. After the outlawing of slavery in the U.S., many of the plantations were sold or subdivided as the ample source of cheap labor was no longer an option.

Key Issue 4: Why do farmers face economic difficulties?

Issues for commercial farmers

-Access to markets

The von Thünen model was introduced by Johann Heinrich von Thünen in 1826 to help explain the importance of proximity to market in the choice of crops on commercial farms. A rough schematic is reproduced below:

City

Horticulture and dairy

Forestry

Crop rotation

Alternating pasture and crop

Animal grazing

 The basic premise of von Thünen’s model is that the more perishable and difficult to ship something, the closer it will be to the market.

-Overproduction

 Farming efficiency has increased at a remarkable pace in MDC’s. The U.S.

government attacks the excess food supply problem in three ways. The farmers are asked not to grow crops that are in excess supply already. Second, farming is substantially subsidized in order to keep farmers in business. Lastly, the govt. buys tremendous amounts of excess from the farmers and then sells it or donates it to other govts. throughout the world. Ironically, farmers in MDC’s are encouraged to grow less food, while farmers in LDC’s struggle to produce more.

Some farmers are turning to *sustainable ag- the ag practice that preserves and enhances environmental quality.* Two methods are used: more sensitive land management

(*ridge tillage- the system of planting crops on ridge tops to lower production costs and conserve soil quality);* and better integration of crops and livestock.

Issues for subsistence farmers

-Farmers must feed an increasing number of people. Thus they leave fields fallow for shorter periods of time, effectively turning the land into a desert (*desertification).*

-Because many govt. are trying to develop along the international trade model, they are encouraging farmers to grow crops for export rather than food for direct consumption. The export crop of choice for many LDC farmers is drug crops.

Strategies for increasing food supply

-Expand the land area used for agriculture

-Increase the productivity of land now used (i.e. *green revolution*)

-Identify new food sources

-Increase exports from other countries