

Summary

KEY ISSUE 1

Where Did Agriculture Originate?

Prior to the development of agriculture, people survived by hunting animals, gathering wild vegetation, and fishing. Current agricultural practices vary between developed and developing countries.

LEARNING OUTCOME 10.1.1: Identify the major crop and livestock hearths.

- Agriculture was invented approximately 10,000 years ago in multiple hearths of crops and livestock.

LEARNING OUTCOME 10.1.2: Describe the major differences between subsistence and commercial agriculture.

- Subsistence agriculture, practiced in developing countries, is characterized by a high percentage of farmers in the labor force, limited use of machinery, and small average farm size.
- Commercial agriculture, practiced in developed countries, is characterized by a small percentage of farmers in the labor force, heavy use of machinery, and large average farm size.

THINKING GEOGRAPHICALLY 10.1: Compare agricultural hearths with the origin of Indo-European (Figures 5-18 and 5-19). What similarities appear between the diffusion of language and of agriculture?

GOOGLE EARTH 10.1: Little Andaman Island is home to approximately 100 Onge people, who traditionally live by hunting and gathering. More than 90 percent of the land area of the island appears to be dense forests. Why is this type of land cover especially suitable habitat for animals being hunted?



Key Terms

Agribusiness (p. 366) Commercial agriculture characterized by the integration of different steps in the food-processing industry, usually through ownership by large corporations.

Agricultural revolution (p. 348) The time when human beings first domesticated plants and animals and no longer relied entirely on hunting and gathering.

Agriculture (p. 347) The deliberate effort to modify a portion of Earth's surface through the cultivation of crops and the raising of livestock for sustenance or economic gain.

Aquaculture (or aquafarming) (p. 382) The cultivation of seafood under controlled conditions.

Cereal grain (or cereal) (p. 352) A grass that yields grain for food.

Chaff (p. 363) Husks of grain separated from the seed by threshing.

Combine (p. 370) A machine that reaps, threshes, and cleans grain while moving over a field.

Commercial agriculture (p. 350) Agriculture undertaken primarily to generate products for sale off the farm.

Crop (p. 347) Any plant gathered from a field as a harvest during a particular season.

Crop rotation (p. 364) The practice of rotating use of different fields from crop to crop each year to avoid exhausting the soil.

Desertification (p. 381) Degradation of land, especially in semiarid areas, primarily because of human actions such as excessive crop planting,

animal grazing, and tree cutting. Also known as semiarid land degradation.

Dietary energy consumption (p. 352) The amount of food that an individual consumes, measured in kilocalories (Calories in the United States).

Double cropping (p. 363) Harvesting twice a year from the same field.

Food security (p. 354) Physical, social, and economic access at all times to safe and nutritious food sufficient to meet dietary needs and food preferences for an active and healthy life.

Grain (p. 352) Seed of a cereal grass.

Green revolution (p. 384) Rapid diffusion of new agricultural technology, especially new high-yield seeds and fertilizers.

Horticulture (p. 371) The growing of fruits, vegetables, and flowers.

Hull (p. 363) The outer covering of a seed.

Intensive subsistence agriculture (p. 362) A form of subsistence agriculture in which farmers must expend a relatively large amount of effort to produce the maximum feasible yield from a parcel of land.

Milkshed (p. 368) The area surrounding a city from which milk is supplied.

Paddy (p. 363) The Malay word for wet rice, commonly but incorrectly used to describe a sawah.

Pastoral nomadism (p. 358) A form of subsistence agriculture based on herding domesticated animals.

KEY ISSUE 2

Why Do People Consume Different Foods?

Everyone needs food to survive. The amount of food and the dietary composition of the food vary between developed and developing countries.

LEARNING OUTCOME 10.2.1: Explain differences between developed and developing countries in food consumption.

- Most humans derive most of their dietary energy through cereal grains, especially wheat, rice, and maize.
- The primary source of protein is meat products in developed countries and grain in developing countries.

LEARNING OUTCOME 10.2.2: Explain the global distribution of undernourishment.

- The average individual consumes 50 percent more calories than the recommended minimum, but many in sub-Saharan Africa are getting less than the recommended minimum.
- Worldwide, an estimated 850 million people are undernourished, nearly all of them in developing countries.

THINKING GEOGRAPHICALLY 10.2: Compare world distributions of wheat, rice, and maize production. To what extent do differences derive from environmental conditions and to what extent from food preferences and other social customs?

GOOGLE EARTH 10.2: Fly to Jungle Jim's in Fairfield, Ohio, at 30,000 square meters, possibly the largest supermarket in the United States. Under Find Businesses, type Kroger. Move to the nearest Kroger to the west of Jungle Jim's. How many square meters is it?



Pasture (p. 359) Grass or other plants grown for feeding grazing animals, as well as land used for grazing.

Plantation (p. 364) A large farm in tropical and subtropical climates that specializes in the production of one or two crops for sale, usually to a more developed country.

Prime agricultural land (p. 381) The most productive farmland.

Ranching (p. 372) A form of commercial agriculture in which livestock graze over an extensive area.

Reaper (p. 370) A machine that cuts cereal grain standing in a field.

Ridge tillage (p. 386) A system of planting crops on ridge tops in order to reduce farm production costs and promote greater soil conservation.

Sawah (p. 363) A flooded field for growing rice.

Shifting cultivation (p. 360) A form of subsistence agriculture in which people shift activity from one field to another; each field is used for crops for a relatively few years and left fallow for a relatively long period.

Slash-and-burn agriculture (p. 360) Another name for shifting cultivation, so named because fields are cleared by slashing the vegetation and burning the debris.

Spring wheat (p. 370) Wheat planted in the spring and harvested in the late summer.

Subsistence agriculture (p. 350) Agriculture designed primarily to provide food for direct consumption by the farmer and the farmer's family.

Sustainable agriculture (p. 386) Farming methods that preserve long-term productivity of land and minimize pollution, typically by rotating soil-restoring crops with cash crops and reducing inputs of fertilizer and pesticides.

Swidden (p. 360) A patch of land cleared for planting through slashing and burning.

Thresh (p. 363) To beat out grain from stalks.

Transhumance (p. 359) The seasonal migration of livestock between mountains and lowland pastures.

Truck farming (p. 367) Commercial gardening and fruit farming, so named because *truck* was a Middle English word meaning "bartering" or "exchange of commodities."

Undernourishment (p. 354) Dietary energy consumption that is continuously below the minimum requirement for maintaining a healthy life and carrying out light physical activity.

Wet rice (p. 362) Rice planted on dry land in a nursery and then moved to a deliberately flooded field to promote growth.

Winnow (p. 363) To remove chaff by allowing it to be blown away by the wind.

Winter wheat (p. 370) Wheat planted in the autumn and harvested in the early summer.

KEY ISSUE 3

Where Is Agriculture Distributed?

Most people in developing countries are subsistence farmers, growing crops primarily to feed themselves. Important types of subsistence agriculture include shifting cultivation, pastoral nomadism, and intensive farming. The most common type of farm in developed countries is mixed crop and livestock. Where mixed crop and livestock farming is not suitable, commercial farmers practice other types of agriculture, including dairy farming, commercial gardening, grain, Mediterranean, and ranching.

LEARNING OUTCOME 10.3.1: Identify the 11 major agricultural regions.

- The most widely used map of agriculture divides the world into 11 major regions, including 5 in developing countries and 6 in developed countries.

LEARNING OUTCOME 10.3.2: Explain how pastoral nomadism works in the dry lands of developing regions.

- Pastoral nomadism, which is the herding of animals, is the principal form of agriculture adapted to the dry lands of developing countries.

LEARNING OUTCOME 10.3.3: Explain how shifting cultivation works in the tropics of developing regions.

- Distinctive features of shifting cultivation include the clearing of land through slashing and burning and the use of fields for only a few years.

LEARNING OUTCOME 10.3.4: Explain how intensive subsistence farming works in the high population concentrations of developing regions.

- The principal crop in the intensive subsistence region is wet rice.
- Growing rice is an intensive operation that depends primarily on abundant labor.

LEARNING OUTCOME 10.3.5: Describe reasons for growing crops other than wet rice in intensive subsistence regions.

- In intensive subsistence areas where the climate is unsuitable for rice, hardier crops are grown, such as wheat and barley.
- Plantation farming is a form of commercial agriculture conducted in developing regions. Plantations grow crops primarily for export to developed countries.

LEARNING OUTCOME 10.3.6: Describe how mixed crop and livestock farming works.

- Mixed crop and livestock is the most common form of agriculture in the center of the United States.
- Crops, especially maize and soybeans, are grown primarily to feed animals.

LEARNING OUTCOME 10.3.7: Describe how dairy farming and commercial gardening work.

- Dairy farming is especially important near major population concentrations in developed countries.
- Commercial gardening is the predominant form of agriculture in the southeastern United States. These farms specialize in fruits and vegetables preferred by relatively wealthy consumers in developed countries.

LEARNING OUTCOME 10.3.8: Describe how grain and Mediterranean farming work.

- Grain, especially wheat, is grown in areas that are too dry for mixed crop and livestock farming.
- Mediterranean agriculture specializes in crops such as grapes and olives.

LEARNING OUTCOME 10.3.9: Describe how livestock ranching works.

- Livestock is raised on land that is too dry for growing crops.

THINKING GEOGRAPHICALLY 10.3: Review the concept of overpopulation (the number of people in an area exceeding the capacity of the environment to support life at a decent standard of living). What agricultural regions have relatively limited capacities to support intensive food production? Which of these regions face rapid population growth?

GOOGLE EARTH 10.3: Terraces for planting rice are carved into the hillsides surrounding the village of Banaue, Philippines. What step in growing rice, as described in Learning Outcome 10.3.4, makes it necessary to terrace the hillsides?



KEY ISSUE 4

Why Do Farmers Face Economic Difficulties?

Agriculture in developing countries faces distinctive economic problems resulting from rapid population growth and pressure to adopt international trade strategies to promote development. Agriculture in developed nations faces problems resulting from access to markets and overproduction.

LEARNING OUTCOME 10.4.1: Describe the impact of population growth and trade on farming in developing countries.

- Due to rapid population growth, subsistence farmers must feed more people.
- Pressure to contribute to international trade means that subsistence farmers increasingly grow crops to export rather than to consume at home.

LEARNING OUTCOME 10.4.2 Understand distinctive challenges for developing countries to increase food supply.

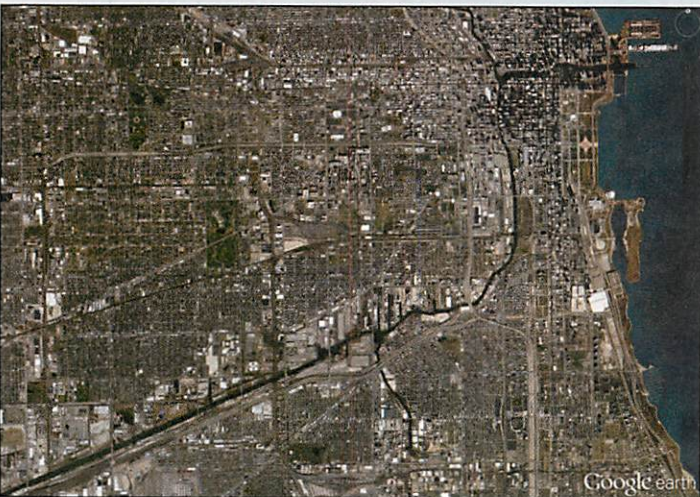
- Africa faces the greatest challenge in providing enough food for a growing population.
- Export crops such as drugs are increasingly been grown in some developing countries.

LEARNING OUTCOME 10.4.3: Explain the impact of overproduction and market access on farming in developed countries.

- Because of their efficiency, commercial farmers produce more food than can be consumed in developed countries.

LEARNING OUTCOME 10.4.4: Explain the contribution of expanding exports and farmland to world food supply.

- Export of food has increased rapidly, although only a handful of countries produce enough to be major exporters.
- Historically, agricultural output was increased by expanding the amount of land that is farmed, but expansion of farmland has slowed in recent decades.



LEARNING OUTCOME 10.4.5: Describe the contribution of fishing to world food supply.

- Fish consumption is increasing but accounts for a small percentage of the average human's diet.
- Fish production has increased primarily through aquaculture rather than catching of wild fish.

LEARNING OUTCOME 10.4.6: Describe the contribution of higher productivity to world food supply.

- Agricultural productivity has increased sharply, especially through the invention of higher-yield seeds and expanded use of fertilizers.
- Despite advances, food prices in the early twenty-first century have been at a record high.

LEARNING OUTCOME 10.4.7: Describe the role of sustainable agriculture in world food supply.

- Sustainable agriculture involves sensitive land management, limited use of chemicals, and better integration of crops and livestock.
- Sustainable agriculture accounts for a small but increasing share of world agriculture.

THINKING GEOGRAPHICALLY 10.4: New Zealand once sold nearly all its dairy products to the British, but since the United Kingdom joined the European Union in 1973, New Zealand has been forced to find other markets. What are some other examples of countries that have restructured their agricultural production in the face of increased global interdependence and regional cooperation?

GOOGLE EARTH 10.4: The eastern end of the Chicago Sanitary and Ship Canal joins with the Chicago River near the center of Chicago. The canal was constructed to provide the only water link between the Great Lakes and the Mississippi River. If Asian carp now migrating up the Mississippi River are to be prevented from reaching Lake Michigan, the canal will have to be blocked. What is the approximate distance between the end of the canal at the Chicago River and Lake Michigan?

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