AGRICULTURE TYPES AND REGIONS

Agriculture is the intentional modification of Earth to raise animals or crops – and it can be done for food or for profit. Farming done for profit is called **commercial agriculture**, whereas **subsistence agriculture** is when farming is done to feed the farmer. The cost to farm plays a large role in what to farm. When land is scarce or expensive, **intensive agriculture** takes place, which involves more cost per space. When land is plentiful or inexpensive, **extensive agriculture** takes place, which uses less cost per space.

The types of intensive agriculture are market gardening, mixed crop & livestock, and plantation. **Market gardening** is the growing of fruits and vegetables. **Mixed crop & livestock farming** is an integrated system of growing crops and raising animals. **Plantations** are large farms that specialize in the growing of one crop. Plantation crops include coffee, cocoa, sugarcane, and bananas.

The types of extensive agriculture are nomadic herding, livestock ranching, and shifting cultivation. **Nomadic herding**, also called **pastoral nomadism,** is the herding of animals in places unable to grow crops. Animals used include cattle, sheep, and camels. **Transhumance** refers to the seasonal migration of nomadic herders from highlands in summer to lowlands in winter. **Livestock ranching** is the grazing of animals over a large area or a confined area, such as a **feedlot**. Livestock animals include cattle, pigs, and chicken. **Shifting cultivation** refers to the **slash-and-burn** technique of clearing fields for farming, then leaving the fields **fallow**, or unfarmed, to allow the vegetation to grow back.

Climate influences all agriculture, but some agriculture only takes place under certain climatic conditions. **Mediterranean** farming takes place in Mediterranean climates, where summers are hot-dry, and winters are mild due to coastal conditions. Mediterranean crops include olives, figs, and grapes. Shifting cultivation only takes place in tropical environments, where ample rainfall washes away nutrients from the soil. Nomadic herding takes place in environments too hot and dry to support growing crops.

Although most people live in urban environments, the majority of Earth's land is considered rural. The most dominant human activity that takes place on these lands is agriculture.

AGRICULTURE & RURAL LAND-USE

Technological advancements have significantly impacted the way humans grow and consume food.

AGRICULTURE REVOLUTIONS

For most of history, humans were hunters and gatherers. Groups were small and constantly on the move in search of food. One of the single most influential events in human history was the invention of farming—the intentional domestication of plants and animals. The first agriculture revolution, called the Neolithic Revolution, occurred several thousand years ago. Important agricultural hearths of the Neolithic Revolution include the Fertile Crescent, Indus River Valley, Southeast Asia, and Mesoamerica.

The second and third agricultural revolutions significantly increased output. The **second agricultural revolution** coincided with the Industrial Revolution. It was characterized by the mechanization and commercialization of agriculture. Increased productivity on farms created by machine-based technology enabled humans to engage in large-scale commercial agriculture. The third agricultural revolution is called the **Green Revolution**. It began in the 1960s and was characterized by high-yield seeds, created by seed **hybridization** and **genetic modification**, and increased use of fertilizers and pesticides. The Green Revolution significantly increased crop production, especially corn, wheat, and rice. While many hungry areas of Asia and Latin America saw improvements from the Green Revolution, African farmers were unable to reap its benefits. Lack of land, water, and financial resources to purchase and maintain the new strands proved too costly.

SURVEY METHODS AND RURAL SETTLEMENTS

Land surveying involves measuring and determining the extent of boundaries. Different survey methods have been used in the United States to shape humans' use of rural lands. Three methods include the metes and bounds, township and range, and long lot. **Metes and bounds** used the location of physical objects, such as trees, rivers, or large rocks. **Township and range** used man-made base lines and meridians to create rectangular-shaped plots. The **long lot** system created long, thin sections of land, each with access to a river. Metes and bounds and township and range were used by British colonists, while the long lot system was largely used by French colonists. Three types of rural settlements exist: nucleated, linear, and dispersed. **Nucleated settlements** are characterized by close proximity of houses, whereas in **dispersed settlements** houses are much farther apart. **Linear settlements** follow patterns of lines, often forged by roads, rivers, and railroads.

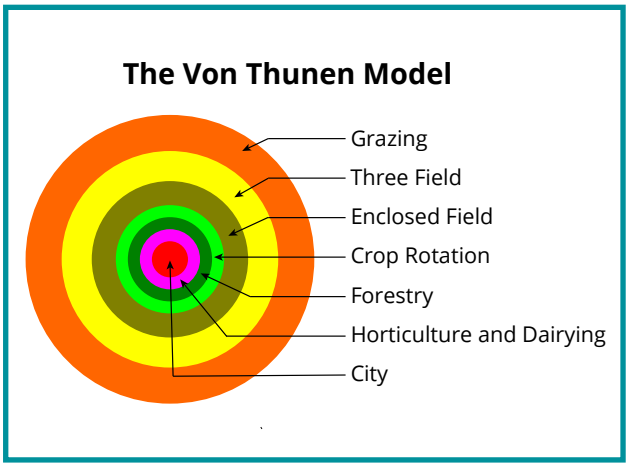
GLOBALIZATION AND CHALLENGES OF AGRICULTURE

The **economy of scale** in agriculture, or the ability to produce more with less, has increased, thereby increasing the carrying capacity of land. Innovations in agriculture—such as **genetically modified organisms (GMOs)** and **aquaculture**, the raising of water-based foods—and transportation have created a global network of agriculture where producers and consumers are connected through complex **commodity chains**. Agricultural products can transverse miles and miles of ocean, rail, air, and road. **Agribusiness** refers to the integration of steps in the food-production industry. From farm to restaurant or grocery store, food undergoes a series of steps, each playing an important role. The globalization of agriculture is influenced by trade, political relations among states, and infrastructure.

Accompanying many agricultural innovations are debates over **sustainability**, water and soil use, reductions in biodiversity, and fertilizer & pesticide overuse. The globalization of food has also influenced consumer choice in food selection. It has led to consumer-conscious movements such as **urban farming, community-supported agriculture (CSA), organic farming & value-added specialty crops, fair trade, and eat-local food movements**.

VON THÜNEN MODEL

The most important agricultural model in geography was created by Johann Heinrich **von Thünen**, in the early 1800s. His model helps explain the transportation cost associated with distance from the market. The model consists of concentric rings located around a central market. The model shows that intensive farming needs to be nearer the market, whereas extensive farming can take place farther from the market, largely based on **bid-rent theory**. His theory is limited in that land used for specialty farming does not always conform to the model.



CONSEQUENCES OF AGRICULTURE

Humans can alter the landscape to meet their agricultural needs. **Terrace farming**—farming by building steps into hills, irrigation, draining wetlands, and deforestation are examples. Other environmental consequences of agriculture include **pollution, land cover change, desertification, soil salinization, and resource overuse**.

Social consequences of agriculture can be seen as humans' diet have significantly changed. Additionally, women's role in the production and consumption food varies in many places based on level of development.

URBAN SUSTAINABILITY

Ideas and policies designed to conserve/preserve urban systems are known as **sustainable design initiatives**. Such initiatives include zoning practices that create space for mixed land use, walkable/bikeable transportation routes, transportation-oriented development, and smart-growth polices such as **New Urbanism**, greenbelts, and slow-growth cities. These ideas and policies have been met with mixed reactions. Praise has been given as the initiatives have led to the reduction of sprawl, improved walkability and transportation, and improved livability. However, criticisms include the potential of increased housing costs, **de facto segregation**, and the loss of historical character of a place.

A major challenge to urban sustainability is **urban and suburban sprawl**. Additional challenges include sanitation, climate change, air/water quality, increased energy use, and ecological footprints of cities. Responses to address these challenges can vary too. Responses may include regional planning efforts, remediation and development of brownfields, restriction on urban growth in certain areas, and polices made by governments to protect farmland or other non-urban environments.

NOTES

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