AGRICULTURE

Chapter 11
What Is Agriculture, and Where Did Agriculture Begin?

The purposeful tending of crops and raising of livestock in order to produce food and fiber.
Economic Activities

• **Primary economic activities**: Products closest to the ground

• **Secondary economic activities**: Manufacturing of primary products into new products

• **Tertiary economic activities**: Services, connecting producers to consumers to facilitate trade

• **Quaternary economic activities**: Information or the exchange of goods

• **Quinary economic activities**: Tied into research or higher education
Arable Land

World - Percentage of Arable Land

- Very high: Over 35%
- High: 21-35%
- Adequate: 11-20%
- Low: 5-10%
- Very low: Below 5%
- Data not available

Key:
- U.S.
- Canada
- United States
- Atlantic Ocean
- Indian Ocean
- Southern Ocean
- Pacific Ocean
- Tropic of Cancer
- Tropic of Capricorn
- Equator
The First Agricultural Revolution

- **South and Southeast Asia**: Root crops, up to 14,000 years ago
- **Southwest Asia (the Fertile Crescent)**: Seed crops, about 10,000 years ago

WORLD AREAS OF AGRICULTURAL INNOVATIONS

1. Upper Southeast Asian Mainland
2. Lower Southeast Asian Mainland and Malaysia
3. Eastern India and Western Myanmar
4. Southwestern Asia
   (Northwest India–Caucasus)
5. Abyssinian and East African Highlands
6. Mesoamerican Region
   (Southern Mexico to Northern Venezuela)
7. North Central China
   (including the Central Asian Corridor)
8. Mediterranean Basin-Classical Near Eastern Fring
9. Western Sudan Hill Lands and their Margins
10. Andean Highlands and their Margins
11. Eastern South America
    (centered on Eastern Brazil)
The Fertile Crescent

• Beginning of planned cultivation of seed crops
• Enlargement of plants from seed selection
• Generated a surplus of wheat and barley
• First integration of plant growing and animal raising
  – Crops to feed livestock
  – Livestock to help grow crops
• Animal domestication
  – Began in Fertile Crescent (c. 8000 years ago)
  – Relatively few domestic animals
  – Continuing efforts at domesticating animals usually not very successful
The Fertile Crescent
Modern Hunters-Gatherers

- Pressure to change in globalized economy
- Studied and mapped groups
  - San of Southern Africa
  - Aboriginals of Australia
  - Indigenous peoples of Brazil
  - Groups in Americas, Africa, Asia
Subsistence Agriculture

• Strict meaning: Farmers produce enough for themselves and their families and do not enter the cash economy at all

• Today, usually sell small amounts in the market

• Characteristics
  – Land held in common
  – Surpluses shared with everyone
  – Personal wealth accumulation restricted
  – Individual advancement at expense of group limited
WORLD REGIONS OF PRIMARILY SUBSISTENCE AGRICULTURE

In the shaded areas, subsistence crop farming is the leading way of life. In an average year, little surplus can be sold on markets.
Shifting Cultivation

• Shifting fields to find better land
• Practiced primarily in tropical and subtropical regions
• Cycle
  – Clear plot of vegetation
  – Plant crops
  – Loss of fertility
    • Loss of decaying vegetation
    • Leaching of nutrients
  – Abandon plot and begin again in a new location
How Did Agriculture Change with Industrialization?

• **Second Industrial Revolution**: A series of innovations, improvements, and techniques used to improve the output of agricultural surpluses
  - New tools
  - Advances in livestock breeding
  - New fertilizers

• Started before the Industrial Revolution
Von Thünen Model

- Variation in products by distance from the town, with livestock raising farthest away
- Use of land governed by cost of transportation
- First effort to analyze the spatial character of economic activity
Application of Von Thünen Model

• Chinese village
  – Land improvement (by adding organic material) close to village
  – Land degradation (lots of pesticides and fewer conservation tactics) farther from village

• Wealthy countries
  – Underlying principles on larger scale
  – Use of faster, higher capacity transportation
Third Agriculture Revolution (Green Revolution)

• Began in U.S. Midwest, then applied to less wealthy countries

• Invention of high-yield grains, especially rice, with goal of reducing hunger
  – Increased production of rice
  – New varieties of wheat and corn
  – Reduced famines due to crop failure
  – Most famines today due to political problems
  – Impact (in terms of hunger) greatest where rice is produced
Opposition to Green Revolution

- Vulnerability to pests
- Soil erosion
- Water shortages
- Micronutrient deficiencies
- Dependency on chemicals for production
- Loss of control over seeds
- Genetically modified (GM) crops
What Imprint Does Agriculture Make on the Cultural Landscape?

Cadastral systems

• **Township and Range System** (rectangular survey system): Based on a grid system that creates 1-square-mile sections

• **Metes and Bounds Survey**: Uses natural features to demarcate irregular parcels of land

• **Long-lot Survey System**: Divides land into narrow parcels stretching back from rivers, roads, or canals
Dominant Land Survey Systems in the U.S.
What Is the Global Pattern of Agriculture and Agribusiness?

**Commercial agriculture:** Large-scale farming and ranching operations that employ vast land bases, large mechanized equipment, factory-type labor forces, and the latest technology

- Roots in colonial economic system
- Today, global production made possible by advances in transportation and food storage
World Climates
(Köppen Classification System)

WORLD CLIMATES
After Köppen–Geiger

A HUMID EQUATORIAL CLIMATE
- Af: No dry season
- Am: Short dry season
- Aw: Dry winter

B DRY CLIMATE
- BS: Semiarid
- BW: Arid

C HUMID TEMPERATE CLIMATE
- Cs: Dry winter
- Cw: Dry summer
- Cf: No dry season

D HUMID COLD CLIMATE
- Dw: No dry season

E COLD POLAR CLIMATE
- E: Tundra and ice

H HIGHLAND CLIMATE
- H: Unclassified highlands

Legend:
- a: hot summer
- b: cool summer
- c: short, cool summer
- d: very cold winter
World Agriculture

WORLD AGRICULTURE

1. Dairying
2. Fruit, Truck and Specialized Crops
3. Mixed Livestock and Crop Farming
4. Commercial Grain Farming
5. Subsistence Crop and Livestock Farming
6. Mediterranean Agriculture
7. Diversified Tropical Agriculture – chiefly plantation
8. Intensive Subsistence Farming – chiefly rice
9. Intensive Subsistence Farming – chiefly wheat and other crops
10. Rudimentary Sedentary Cultivation
11. Shifting Cultivation
12. Livestock Ranching
13. Nomadic and Semi-Nomadic Herding

Nonagricultural Areas
World Agriculture

• Plantation crops
  – Ties to governments
  – Cotton and rubber
  – Luxury crops

• Commercial livestock, fruit and grain

• Mediterranean agriculture

• Illegal drugs
Fair Trade Agriculture

- Fair trade coffee: Shade-grown coffee produced by certified fair-trade farmers, who then sell the coffee directly to coffee importers
- Guarantees a “fair trade price”
- Over 500,000 registered farmers
- Produced in more than 20 countries
- Often organically grown
- Purchase commitment by Starbucks and other chains
Agribusiness and the Changing Geography of Agriculture

- **Agribusiness**: Businesses that provide a vast array of goods and services to support the agricultural industry
- Spatial concentration of agricultural activities
- Relationship to subsistence farming
  - Privileged large landowners
  - Government organization of agriculture
- Impact of markets
Loss of Productive Farmland

Farmland in danger of being suburbanized as cities expand