Chapter 9: Food and Agriculture

Unit 5
Where Did Agriculture Originate?

• Origins of agriculture
  • *Agriculture* = deliberate modification of Earth’s surface through the cultivation of plants and/or rearing of animals
  • *Cultivate* = “to care for”
  • *Crop* = any plant cultivated by people
Where Did Agriculture Originate?

• Origins of agriculture
  • Hunter-gatherers
    • Perhaps 250,000 remaining today
  • Invention of agriculture
    • When it began = unclear
    • Diffused from many hearths
Where Did Agriculture Originate?
Where Did Agriculture Originate?

• Commercial and subsistence agriculture
  • Subsistence = produced mainly for the farm family’s survival
    • Most common in LDCs
  • Commercial = produced mainly for sale off the farm
    • Most common in MDCs
Where Did Agriculture Originate?

- Agriculture and Climate
Where Did Agriculture Originate?

• Commercial and subsistence agriculture
  • Five characteristics distinguish commercial from subsistence agriculture
    • Purpose of farming
    • Percentage of farmers in the labor force
    • Use of machinery
    • Farm size
    • Relationship of farming to other businesses
Why Do People Consume Different Foods?

• Diet and Nutrition
  • Dietary energy consumption—the amount of food an individual consumes
  • Most humans consume cereal grain and/or grain to reach their needs
    • Cereal grain=grass that yields grain for food
      • Examples:
        • Grain=seed from a cereal grass

• Dietary Energy Needs
  • What is the difference between MDCs and LDCs?

• Source of nutrients
  • Protein—nutrient needed for growth and maintenance of the human body
    • Examples:
Where is Agriculture Distributed?

• Certain forms of agriculture can only happen in specific climates
## Where is Agriculture Distributed?

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<th>Subsistence Agriculture</th>
<th>Commercial Agriculture</th>
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Where is Agriculture Distributed?

• **Pastoral nomadism** (herding domesticated animals)
  - Found primarily in arid and semiarid B-type climates
  - Animals are seldom eaten
    - The size of the herd indicates power and prestige
  - Type of animal depends on the region
    - For example, camels are favored in North Africa and Southwest Asia
  - *Transhumance* practiced by some pastoral nomads
Where is Agriculture Distributed?

• Shifting cultivation
  • Most prevalent in low-latitude, A-type climates
  • Two features:
    • Land is cleared by slashing and burning debris
      • Slash-and-burn agriculture
    • Land is tended for only a few years at a time
  • Types of crops grown vary regionally
  • Traditionally, land is not owned individually
Where is Agriculture Distributed?

• Intensive subsistence
  • Found in areas with high population and agricultural densities
    • Especially in East, South, and Southeast Asia
    • To maximize production, little to no land is wasted
    • Double cropping is common
  • Intensive with wet rice dominant
  • Intensive with wet rice not dominant
Where is Agriculture Distributed?

• Intensive Subsistence
  • Wet-rice dominant: 4 steps

• Wet-rice not dominant
  • Main crops:
    • Crop rotation common
Where is Agriculture Distributed?

Outliers in agriculture:

• Fishing
  • Aquaculture/aquafarming

• Plantation farming
  • Found in Latin America, Africa, and Asia
  • Products are grown in LDCs but typically are sold to MDCs
  • Plantations specialize in one or two cash crops
    • Important crops = coffee, sugarcane, cotton, rubber, and tobacco
  • A large labor force is usually needed in sparsely settled regions
Where is Agriculture Distributed?

• Agribusiness
Where is Agriculture Distributed?

• Grain farming
  • The largest commercial producer of grain = the United States

• Mediterranean agriculture
  • Based on horticulture

• Commercial gardening and fruit farming
  • Truck farms

• Mixed crop and livestock farming
  • Most land = devoted to crops
  • Most profits = derive from the livestock
Where is Agriculture Distributed?

• Von Thunen’s Model: Commercial agriculture’s access to markets
  • The choice of crop to grow is related to the proximity to the market

• Dairy farming
  • Regional distribution: the milkshed
  • Two primary challenges
    • Labor-intensive
    • Expense of winter feed

• Livestock ranching
  • Practiced in marginal environments
Why Do Farmers Face Sustainability Challenges?

• Losing agricultural land
  • Urbanization
    • Loss of prime agricultural land increasing in many areas
  • Desertification
    • What type of climate must exist for this to occur?

• Improving agricultural productivity
  • Leaving areas fallow
  • Annual cropping
  • Multi-cropping
  • Green Revolution: 2 practices
Why Do Farmers Face Sustainability Challenges?

• Conserving agricultural resources
  • Water use/conservation
  • Sustainable land management
    • Conservation tillage: method of soil cultivation that reduces erosion and runoff
      • No tillage—leaves all of the soil undisturbed, entire residue of pervious year’s harvest is left untouched
      • Ridge tillage—system of planting crops on ridge tops

• Applying biotechnology to agriculture
  • GMOs
Why Do Farmers Face Sustainability Challenges?

• Global Food Trade
  • Trend??

• Drug Trade
Why Do Farmers Face Sustainability Challenges?

• Global Agriculture and Undernourishment
  • The greatest challenge to world food supply in the 21st century has been food prices rather than food supply.
  • Undernourishment—dietary energy consumption that is continuously below that needed for healthy life and carrying out light physical activity
    • What regions experience the highest levels of undernourishment?

• Sustainable Agriculture
  • Organic farming
  • Clean produce
  • Government policies