Name _____ Period _____ Date _____

Unit 5

11.1
What is agriculture, and where did agriculture begin?
How did agriculture change with industrialization?

Agriculture Geography

The following information corresponds to Chapter 11 in your textbook. Fill in the blanks to complete the definition or sentence. Note: All of the following information in addition to your reading is important, not just the blanks.

Figure 11.1
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Field Notes: Changing Greens

The crop pictured in the field notes is _____. The increase in acres planted to this crop is in response to the growing _____ plants. _____ _____ made it possible to grow the crops, which are resistant to the weed killer, _____. The company that produces _____ is _____. Two other crops resistant to Roundup are _____ and _____

- **_____ the production of crops without the use of synthetic or industrially produced pesticides and fertilizers**
  - **_____ are now about 3% of the food sales in the US, and though small is growing.**
  - **Organic crops can be grown everywhere, but most are sold in the global economic _____**
  - **Organic agriculture in the periphery and semi-periphery is similar to major _____, almost entirely for _____**
  - **_____ certification provides a higher level of income for the farmer.**
  - **Organic agriculture maybe more environmentally friendly, but is not yet able to produce enough to feed the mass of humanity.**

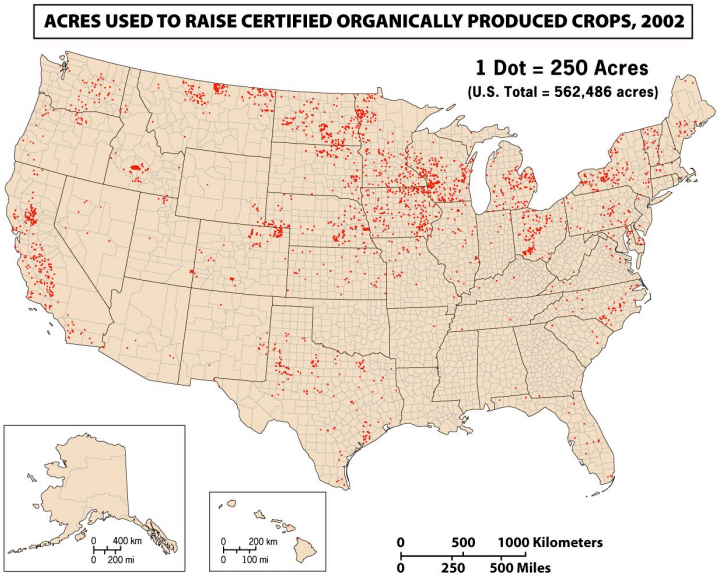


Figure 11.2
Courtesy of: United States Census of Agriculture, 2002

What is agriculture, and where did agriculture begin?

Examine the map on p. 351. Read the title, the key, look at the divisions. What is the smallest scale show on the map? _____ Is there any certified organically produced crops in Leon County? _____ Are you sure? Can maps lie?

- _____ = the deliberate tending of crops and livestock to produce _____. _____, and _____.

Classifying Economic Activities

- _____ activities – the **extractive sector**; direct extraction of natural resources from the environment; hunting and gathering, herding, fishing, mining, lumbering,…
- _____ activities – the **manufacturing** sector; processes raw materials and transforms them into finished industrial products; production of an almost infinite range of commodities (toys, chemicals, buildings,)
- _____ activities – the **service** sector; engaged in services; transportation, banking, education, …)
- _____ sector - concerned w/ collection, processing, and manipulation of information & capital (finance, administration, insurance, legal services) Information Age!
- _____ sector – require a high level of specialized knowledge or skill (scientific research, high-level management) Research & Development – Thinking outside the box!

In the US agriculture is produced with **Core Processes** (Thousands support agricultural production through _____, _____, _____, etc, but only about _____ % of the workforce is directly involved in the agricultural production.

- In the US the total agricultural production is at an _____ _____ _____, but the proportion of the labor force in agriculture is at an _____ _____ _____.
  - In 1950 one farmer produced enough to feed ____ people, today one farmer can feed _____.
  - New technologies created _____, & _____, _____ & _____ all designed to increase yields.
- The 1st _____ _____ occurred around 12,000 yrs ago (Neolithic Era) concurrently in areas like the Fertile Crescent, China, N. Africa…; it was accompanied by a modest population explosion, along with plant and animal _____ (about 40 animal species have been domesticated today).
  - _____ (remember him from the Cultural Landscape?) suggested that _____ crops were first domesticated in _____ & _____ with tropical plants. Plants, including _____ or _____, yams, and _____ (yum!) later in NW S. Am
  - _____, plants that are reproduced by cultivating seeds is believed to have developed in the region of _____ (the Fertile Crescent)
- _____ probably took place about 8000 years ago. The advantages of animal domestication are – their use as _____, a source of _____, & a provider of _____

TABLE 11.1
Chief Source Regions of Important Crop Plant Domestications. Adapted with permission from: J. E. Spencer and W. L. Thomas, *Introducing Cultural Geography*, 1978, John Wiley & Sons, Inc.

A. Primary Regions of Domestications

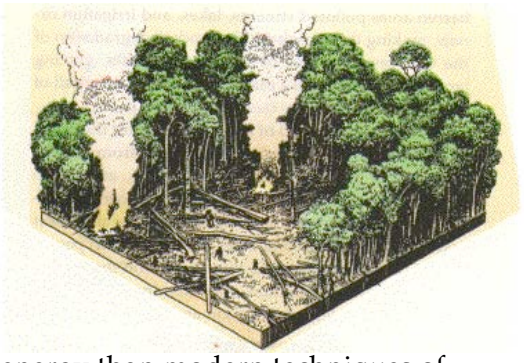
1. The Upper Southeast Asian Mainlands
   Citrus Fruits* Bamboos* Yams* Rices* Eugenias* Lichi Teas Ramie
   Bananas* Taros* Cabbages* Beans* Job's tears Longan Tung oils Water chestnut
2. Lower Southeast Asian Mainland and Malaysia (including New Guinea)
   Citrus fruits* Taros* Pandanuses Breadfruits Lanzones Vine peppers* Nutmeg Areca
   Bananas* Yams* Cucumbers* Jackfruits Durian Gingers* Clove Abaca
   Bamboos* Almonds* Sugarcanes Coconuts Rambutan Brinjals* Cardamom
3. Eastern India and Western Burma
   Bananas* Beans* Millets* Grams Vine peppers* Mangoes Safflower Lotus
   Yams* Rices* Sorghums* Eggplants Gingers* Kapok* Jute Turmeric
   Taros* Amaranths* Peas* Brinjals* Palms* Indigo Sunn Hemp
4. Southwestern Asia (Northwest India-Caucasus)
   Soft wheats* Peas* Rye* Beets* Hemp Soft Pears* Pomegranates Walnuts
   Barleys* Oil seeds* Onions Spinach Apples Cherries* Grapes* Melons
   Lentils* Poppies Carrots* Sesames Almonds* Plums* Jujubes* Tamarind
   Beans* Oats* Turnips Flax Peaches* Figs Pistachio Alfalfa
5. Ethiopian and East African Highlands
   Hard wheats* Sorghums* Barleys Beans* Oil seeds* Melons* Coffees Okras
   Millets* Rices* Peas* Vetches Cucumbers* Gourds* Castor beans Cottons*
6. Meso-American Region (Southern Mexico to Northern Venezuela)
   Maizes Taros* Tomatoes* Avocados Muskmelons Cottons*
   Amaranths* Sweet potatoes Chili peppers Sapotes Palms* Agaves
   Beans* Squashes Custard apples Plums* Manioc Kapok

Table 11.1 part 1

- _____ agriculture is growing only enough food for your family, with little or no cash

See Table 11.1 on page 356 for secondary regions

- _____, found primarily in tropical or subtropical zones, where farmers had to abandon plots of land after the soil became infertile. Between _____ & _____ million people still make a living by _____ (many more than those who live by hunting and gathering & more land use than hunters and gatherers.)
  - _____ (also called _____ & _____ agriculture) uses fire to burn vegetation cleared from the site. This adds a layer of ash, which contributes to the soil fertility. **<u>Swidden</u> = the term for land prepared for planting after slash and burn.**
  - Although Shifting Agriculture uses large areas of land, it conserves both forests and soil, and uses less energy than modern techniques of farming



- During colonization, European powers sought to _____ farming by ending subsistence and integrating farmers into the colonial system making farmers grow _____ such as cotton.
- Subsistence land use is giving way to more _____ and _____.

How Did Agriculture Change with Industrialization?

- Johann Heinrich _____ _____ (1783-1850) witnessed the 2nd Agricultural Revolution firsthand in Rostock, Germany. His model was the first effort to analyze the _____ character of economic activity. Key elements of his model included:
  - Four _____ rings formed around the city, within which particular commodities (or crops) dominated, and others were replaced (without any visible change in terrain, soil, or climate)
  - Closest to town [1] – Dairying and intensive farming occur in the ring closest to the city. Since vegetables, fruit, milk and other dairy products must get to market quickly; highly _____ items, high priced.
  - [2] Timber and firewood would be produced for _____ and _____ materials in the second zone. Before industrialization (and coal power), wood was a very important fuel for heating and cooking. Wood is very heavy and difficult to transport so it is located close to the city.
  - [3] Extensive _____ crops such as wheat for bread, or other grains (less perishable). Since grains last longer than dairy products and are much lighter than fuel, reducing transport costs, they can be located _____ from the city.
  - Outer ring [4] – ranching and livestock raising is located in the final ring surrounding the central city. Animals can be raised far from the city because they are self-_____. Animals can walk to the central city for sale or for butchering.
  - Von Thünen's model assumed: 1) _____ terrain, 2) soil quality and conditions are _____, 3) no barriers to _____ to the market, 4) all transportation done by _____ (& no roads), 5) farmers will act to _____ their profits, and 6) the city is self sufficient, with no external influences.

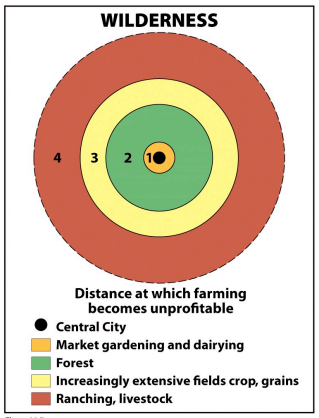


Figure 11.7
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The 3rd Agricultural Revolution

- The _____ Revolution (also called the _____) is still in progress.
- 1940's research on _____ (corn) in Mexico that led to a _____ seed that would grow better and by 1960s Mexico was no longer _____ .
- In the 1960's the Green Rev shifted to _____ where scientists cross-bred a dwarf Chinese variety of _____ with an _____ variety to produce _____, a new _____ that had desirable traits. Newer and better strains _____ has resistance to _____ and a growing cycle of _____ days, making it possible to produce _____ crops per year in some places.


Figure 11.8
Judith Carney, University of California, Los Angeles

- The success of the Green Revolution has been extraordinary. Today most _____ are the result of _____ rather than the inability to produce food.
- The increase in production is a result of new _____, use of _____, _____, _____, and _____ improvements (investment in land, equipment, etc.)
- The Green Rev has had limited impact in _____ Scientists are studying methods for producing high yield a "super rice", _____ & _____ for Africa.

The Green Revolution – PART 2

Biotechnology has developed (GE) _____ crops or (GMOs) _____

- GMOs different from hybrid crops that are cross-bred or cross-pollinated in that they have their genetic structure changed to make them stronger, more resistant to pests, etc. The US leads in the production of GMOS with _____% of all acres of corn and _____% of all acres of _____ using GMOs. Some regions have banned GMOs with strong reaction against them based on concerns about _____ & _____.
- Changes in agriculture have environmental, economic, and social implications. _____ studied projects to convert wetlands into year round rice production in _____, While the project was an agricultural success, women who do most of the agricultural work (___%) received nothing for their labor when the land was registered as "_____" giving control to the _____ & revealed gender inequities.