01 The Neolithic Revolution
10,000 BCE – 3,000 BCE
The Agricultural Revolution in World History
Summer Terms

• Gathering and hunting
• Neolithic or Agricultural Revolution
• Domestication
• Innovation
• Diffusion
• Agriculture is the second great human process after settlement of the globe.
  • started about 12,000 years ago
  • often called the Neolithic or Agricultural Revolution
  • deliberate cultivation of plants and domestication of animals
  • transformed human life across the planet
• Agriculture is the basis for almost all human developments since.
• Agriculture brought about a new relationship between humans and other living things.
  • actively changing what they found in nature rather than just using it
  • shaping the landscape
  • selective breeding of animals
• “Domestication” of nature created new mutual dependence.
  • many domesticated plants and animals came to rely on humans
  • humans lost gathering and hunting skills
    • population increase: too many humans to live by gathering and hunting
• “Intensification” of living: getting more food and resources from much less land.
  • more food led to more people
  • more people led to greater need for intensive exploitation
## Agricultural Breakthroughs

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>DATES (B.C.E.)</th>
<th>PLANTS</th>
<th>ANIMALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southwest Asia (Fertile Crescent)</td>
<td>9000-7000</td>
<td>Barley, wheat, lentils, figs</td>
<td>Goats, sheep, cattle, pigs</td>
</tr>
<tr>
<td>China</td>
<td>6500-5000</td>
<td>Rice, millet, soybeans</td>
<td>Pigs, chickens, water buffalo</td>
</tr>
<tr>
<td>Saharan and Sub-Saharan Africa</td>
<td>3000-2000</td>
<td>Sorghum, millet, yams, teff</td>
<td>Cattle (perhaps 8000 b.c.e.)</td>
</tr>
<tr>
<td>Highland New Guinea</td>
<td>7000-4000</td>
<td>Taro, bananas, yams, sugarcane</td>
<td>N/A</td>
</tr>
<tr>
<td>Andes Region</td>
<td>3000-2000</td>
<td>Potatoes, quinoa, manioc</td>
<td>Llamas, alpacas, guinea pig</td>
</tr>
<tr>
<td>Mesoamerica</td>
<td>3000-2000</td>
<td>Maize, squash (perhaps 7000 b.c.e.), beans</td>
<td>Turkey</td>
</tr>
<tr>
<td>Eastern woodlands of North America</td>
<td>2000-1000</td>
<td>Sunflower, goosefoot, sumpweed</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Comparing Agricultural Beginnings
• The Agricultural Revolution happened independently in several world regions.
  • Fertile Crescent of Southwest Asia
  • several areas in sub-Saharan Africa
  • China
  • New Guinea
  • Mesoamerica
  • the Andes
  • eastern North America
  • all happened at about the same time, 12,000–4000 years ago
  • scholars have struggled with the question of why agriculture developed so late in human history
• Common Patterns
  • Agricultural Revolution coincided with the end of the last Ice Age
    • global warming cycle started around 16,000 years ago
    • Ice Age was over by about 11,000 years ago
    • end of Ice Age coincided with human migration across earth
    • extinction of some large mammals: climate change and hunting
    • warmer, wetter weather allowed more wild plants to flourish
  • gathering and hunting peoples had already learned some ways to manage the natural world
    • “broad spectrum diet”
    • development of sickles, baskets, and other tools to make use of wild grain in the Middle East
    • Amazon: peoples had learned to cut back some plants to encourage growth of the ones they wanted
    • Australians had elaborate eel traps
• women were probably the agricultural innovators
  • men perhaps led in domesticating animals
• gathering and hunting peoples started to establish more permanent villages
  • especially in resource-rich areas
  • population growth perhaps led to a “food crisis”
  • motivation to increase the food supply
• agriculture developed in a number of regions, but with variation
  • depended on the plants and animals that were available
  • only a few hundred plant species have been domesticated
  • five (wheat, corn, rice, barley, sorghum) supply over half the calories that sustain humans
  • only 14 large mammal species were domesticated
• Variations
  • the Fertile Crescent was the first to have a full Agricultural Revolution
    • presence of large variety of plants and animals to be domesticated
    • transition to agriculture triggered by a cold and dry spell between 11,000 and 9500 b.c.e.
    • transition apparently only took about 500 years
      • much larger settlements
    • much more societal sophistication (mud bricks, monuments and shrines, more elaborate burials, more sophisticated tools)
• at about the same time, domestication started in the eastern Sahara (present-day Sudan)
  • the region was much more hospitable 10,000–5,000 years ago
  • domestication of cattle there about 1,000 years before Middle East and India
    • the donkey was domesticated nearer the Red Sea
  • in Africa, animals were domesticated first; elsewhere, plants were domesticated first
• emergence of several widely scattered farming practices
  • sorghum in eastern Sahara region
  • teff and enset in Ethiopian highlands
  • yams, oil palm trees, okra, and the kola nut in West Africa
• African agriculture was less productive than agriculture in the Fertile Crescent
• separate development of agriculture at several places in the Americas
  • absence of animals available for domestication
    • only one of the 14 domesticated large mammals existed in the Americas: the llama/alpaca
    • so Americans lacked protein, manure, and power of large animals
    • Americans continued to rely on hunting for meat
  • only cereal grain available was maize or corn
    • required thousands of years of selective adaptation to reach a size sufficient for productive agriculture
    • nutritionally poorer than cereals of the Fertile Crescent
    • result: replacement of gathering and hunting with agriculture took 3,500 years in Mesoamerica
  • Americas are oriented north/south, so agricultural practices had to adapt to distinct climate zones to spread
    • east/west axis of Eurasia helped the spread of innovation
    • domesticated plants and animals took much longer to spread in the Americas
The Globalization of Agriculture
Agriculture spread in two main ways:

- **diffusion:**
  - gradual spread of techniques and perhaps plants and animals, but without much movement of human population
  - colonization or migration of agricultural peoples
  - conquest, absorption, or displacement of gatherers and hunters
  - often both processes were involved

- **innovation:**
  - New ideas and new ways of thinking – civilization was innovated 7 times:
    - Mesopotamia
    - Nile River Valley
    - Indus River Valley
    - Huang He River Valley
    - Mesoamerica
    - the Andes
    - the Niger River Valley
• **Triumph and Resistance**
  • language and culture spread with agriculture
    • Indo-European languages probably started in Turkey, are spoken today from Europe to India
    • similar process with Chinese farming
  • spread of Bantu language in southern Africa
    • Bantu speakers originated in southern Nigeria or Cameroon ca. 3000 b.c.e.
    • moved south and east over several millennia, taking agriculture with them
    • similar spread of Austronesian-speaking peoples to Philippines and Indonesian islands, then to Pacific island
  • the globalization of agriculture took about 10,000 years
    • did not spread beyond its core region in New Guinea
    • did not spread in a number of other regions
    • was resisted where the land was unsuitable for farming or where there was great natural abundance
      • some peoples apparently just didn’t *want* agriculture
  • by the beginning of the Common Era, gathering and hunting peoples were a small minority of humankind
    • expansion of agriculture destroyed gathering and hunting societies
      • process was sometimes peaceful, sometimes violent
• The Culture of Agriculture
  • agriculture led to much greater populations
    • e.g., early settlement near Jericho had about 2,000 people
  • changes in world population
    • 10,000 years ago: around 6 million people
    • 5,000 years ago: around 50 million people
    • beginning of Common Era: around 250 million people
  • farming did not necessarily improve life for ordinary people
    • meant much more hard work
    • health deteriorated in early agricultural societies
    • new diseases from interaction with animals
    • the first epidemics, thanks to larger communities
    • new vulnerability to famine, because of dependence on a small number of plants or animals
• new constraints on human communities
  • all agricultural people settled in permanent villages
  • the case of Ban Po in China (settled ca. 7,000 years ago)
• explosion of technological innovation
  • pots
  • textiles
    • textile work, like horticultural farming, was especially suitable for women with children
  • metallurgy
• “secondary products revolution” started ca. 4000 b.c.e.: a new set of technological changes
  • new uses for domesticated animals, including milking, riding, hitching them to plows and carts
  • only available in the Eastern Hemisphere
• deliberate alteration of the natural ecosystem
  • removal of ground cover, irrigation, grazing
  • evidence of soil erosion and deforestation in the Middle East within 1,000 years after beginning of agriculture
Social Variation in the Age of Agriculture
• Pastoral Societies
  • some regions relied much more heavily on animals, because farming was difficult or impossible there
  • pastoral nomads emerged in central Asia, the Arabian Peninsula, the Sahara desert, parts of eastern and southern Africa
  • relied on different animals in different regions
    • horses were domesticated by 4000 b.c.e.; encouraged the spread of pastoral peoples on Central Asian steppes
    • domesticated camels allowed human life in the inner Asian, Arabian, and Saharan deserts
  • no pastoral societies emerged in the Americas
• **Agricultural Village Societies**
  
  • most characteristic form of early agricultural societies, like Banpoor Jericho
  
  • maintenance of equality and freedom (no kings, chiefs, bureaucrats, aristocrats)
  
  • the case of Çatalhüyük, in southern Turkey
    • population: several thousand
    • dead buried under their houses
    • no streets; people moved around on rooftops
    • many specialized crafts, but little sign of inherited social inequality
    • no indication of male or female dominance
  
  • village-based agricultural societies were usually organized by kinship, group, or lineage
    • performed the functions of government
    • the Tiv of central Nigeria organized nearly a million people this way in the late nineteenth century
  
  • sometimes modest social/economic inequality developed
    • elders could win privileges
    • control of female reproductive powers
Chiefdoms

- chiefs, unlike kings, usually rely on generosity, ritual status, or charisma to govern, not force
- chiefdoms emerged in Mesopotamia sometime after 6000 b.c.e.
- anthropologists have studied recent chiefdoms in the Pacific islands
- chiefdoms such as Cahokia emerged in North America
- distinction between elite and commoner was first established
  - based on birth, not age or achievement