A crucial influence on the organization of the earth’s surface is the way that people make a living.

Economic activities can be organized as follows:

* primary
* secondary
* tertiary
The primary sector is the part of the economy that draws raw materials from the natural environment.

Examples:
- agriculture
- raising animals
- fishing
- forestry
- mining
THE PRIMARY SECTOR

The primary sector is the **largest sector** of the economy in low-income, pre-industrial nations.
The *secondary sector* is the part of the economy that transforms raw materials into manufactured goods.

**Examples:**
- Refining petroleum into gasoline
- Turning metals into tools and automobiles
THE SECONDARY SECTOR GROWS QUICKLY AS SOCIETIES INDUSTRIALIZE.
The tertiary sector is the part of the economy that involves services rather than goods.

- Construction
- Trade
- Finance
- Real estate
- Private services
- Government
- Transportation
The quaternary sector can be seen as a subset of the tertiary sector.

- It includes jobs concerned with:
  - research and development
  - management and administration
  - processing and disseminating information
## COMPARATIVE ECONOMIC SECTORS
(as percentage of labor force by occupation)

<table>
<thead>
<tr>
<th>Country</th>
<th>Primary (agriculture)</th>
<th>Secondary (industry)</th>
<th>Tertiary (service)</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>38%</td>
<td>46.9%</td>
<td>43%</td>
</tr>
<tr>
<td>Iran</td>
<td>25%</td>
<td>31%</td>
<td>45%</td>
</tr>
<tr>
<td>Mexico</td>
<td>13.7%</td>
<td>23.4%</td>
<td>62.9%</td>
</tr>
<tr>
<td>Nigeria</td>
<td>70%</td>
<td>10%</td>
<td>20%</td>
</tr>
<tr>
<td>Russia</td>
<td>10%</td>
<td>31.9%</td>
<td>58.1%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>1.4%</td>
<td>18.2%</td>
<td>80.4%</td>
</tr>
<tr>
<td>United States</td>
<td>.7%</td>
<td>20.3%</td>
<td>79%</td>
</tr>
</tbody>
</table>
For thousands of years agriculture was the main economic activity of most people on earth, until the Industrial Revolution (1740’s ... a.k.a mid-18th c) transformed economies first in Europe and North America, and eventually influenced most countries in the world.
Because these sectors represent necessary economic activities, most countries today have some people employed in **ALL economic sectors**.
The Origin and Spread of Agriculture
Agriculture is the deliberate tending of crops and livestock in order to produce food and fiber.
Agricultural production in the world today is at an all-time high, mainly because the nature of farming has changed with:

* mechanization
* farm consolidation

These changes have had the most impact in industrial and post-industrial countries.
In ALL countries, the processes that determine the production, distribution, and consumption of food form an important part of culture.

Other cultural factors affect agriculture:

- the ways that land is distributed
- functions of livestock
- consumption of food from crops and animals
How does culture relate to agriculture?

Example:

- Hindus do not eat beef and Muslims do not eat pork.
- Therefore, the two religions greatly impact the nature of agriculture in regions where they have many adherents.
The first humans probably emerged in Southwest Asia as a result of:

- availability of food
- favorable climate
Hunters and Gatherers

- **Hunters** gained skills in capturing and killing animals.
- **Gatherers** learned which plants and fruits were edible and nutritious.
Generally, technological inventions supported the activities of hunters and gatherers:

- Stone
- Metals
The groups traveled frequently, establishing new home bases or camps.

Their migration patterns depended on the movement of game and the seasonal growth of plants.
By 8000 B.C.E., humans had migrated to many areas, probably following herds and other food sources.

Major migrations include:
- Southwestern Asia to Eastern Africa, Australia, Europe, and Asia
- Asia across the land bridge (Beringia) to the Americas
THE NEOLITHIC REVOLUTION
When and how did people give up their wandering and settle to live in one place?
The ability to settle was based almost entirely on the cultivation of plants and the domestication of animals.

These drastic changes in human life are known collectively as the NEOLITHIC REVOLUTION (8000 B.C.E.).
Agricultural hearths developed independently in several regions of the world over a long period of time.

From these agricultural hearths, farming practices diffused across the earth.
Changes that resulted from the Neolithic Revolution

- Increase in reliable food supplies
- Rapid increase in total human population
- Job specialization
- Development of distinction between settled people and nomads
- Widening of gender-specific activities
  - Men → agricultural production and domestication of animals
  - Women → child-rearing, food preparation, care of home
Sauer, a cultural geographer, believed that the earliest form of plant cultivation was *vegetative planting*, in which new plants were produced from existing plants, such as cutting stems and dividing roots.
How did people first learn to farm?

- People first learned to farm by deliberately dividing and transplanting plants that were already growing wild.
- Seed agriculture, or the production of plants through annual planting of seeds, came later.
- Most farmers TODAY practice seed agriculture.
Carl Sauer believed that vegetative planting probably originated in the diverse climates and topography of Southeast Asia.

The people there did more fishing than hunting and were probably more settled. Therefore, they were more likely to experiment with plants.
Sample plants that were domesticated in Southeast Asia:

- taro
- yams
- bananas
- palm trees
The first vegetative planting diffused from the **Southeast Asian** hearth:

- **northward** and **eastward** to China and Japan.
- **westward** through India, Southwest Asia, tropical Africa, and the area around the Mediterranean Sea.
Other early hearths:

- **West Africa**: palm trees and yams
- **Northwestern South America**: manioc, sweet potatoes, and arrowroot
The earliest hearth was probably Southeast Asia, with other early hearths in West Africa and South America.
Carl Sauer identified **three hearths for seed agriculture** in the Eastern Hemisphere.

Those hearths were:
- western India
- northern China
- Ethiopia
Seed Agriculture

- Hearths of crops:
  - **Southwest Asia**: barley and wheat
  - **Ethiopia**: millet and sorghum
The cultural hearth of rice is unknown, but it probably was Southeast Asia.
Two independent seed agriculture hearths originated in the **Western Hemisphere**:
- southern Mexico
- northern Peru
Origin of crops

- Southern Mexico: squash and maize (corn)
- Peru: beans, cotton, squash
Over the years many innovations increased the chances of success for seed agricultural practices.
These innovations included:

- **irrigation** (the channeling of water to fields)
- **plowing** to loosen and turn the soil
- **fencing** to keep animals out of fields
- **building terraces** to provide level field on hillsides
- **fertilizing** with plant and animal waste
- **weeding**
The diffusion of both vegetative planting and seed agriculture from their multiple hearths created a wide variety of food raised and consumed around the world.
THE COLUMBIAN EXCHANGE
Food in the Western and Eastern Hemispheres was almost completely different until the Columbian Exchange during the late 15\textsuperscript{th} and 16\textsuperscript{th} centuries.

Products were carried both ways across the Atlantic and Pacific Oceans.
The European exploration and conquest of the Western Hemisphere during the late 15th and 16th centuries led to the exchange of products between Western and Eastern Hemispheres, with new trade routes across the Pacific and Atlantic Oceans connecting to established trade routes. For the first time in world history, trade routes encircled the globe.
## The Columbian Exchange

### NEW EXCHANGES IN THE COLUMBIAN EXCHANGE

<table>
<thead>
<tr>
<th>The Americas</th>
<th>The Eastern Hemisphere</th>
</tr>
</thead>
<tbody>
<tr>
<td>beans, squash,</td>
<td>wheat, rice, olives, grapes, bananas,</td>
</tr>
<tr>
<td>tomatoes, sweet potatoes,</td>
<td>rice, citrus fruits, melons, figs, sugar,</td>
</tr>
<tr>
<td>peanuts, chilis,</td>
<td>coconuts</td>
</tr>
<tr>
<td>chocolate, maize (corn),</td>
<td>horses, cattle, pigs, sheep, goats,</td>
</tr>
<tr>
<td>potatoes, avocados,</td>
<td>chickens, rabbits, rats</td>
</tr>
<tr>
<td>pineapple, manioc</td>
<td></td>
</tr>
</tbody>
</table>
THE SECOND AGRICULTURAL REVOLUTION
A second agricultural revolution began in Western Europe in the 1600s. It promoted higher yields per acre and per farmer. It preceded the Industrial Revolution, making it possible to feed rapidly growing cities.
Second Agricultural Revolution

- Innovations included:
  - increased use of **fertilizers**
  - **improved collars** for draft animals to pull heavier plows
Wealthy landowners in England began to enlarge their farms through **enclosure**: fencing or hedging blocks of land for experiments with new techniques of farming.

Previously, the land had been held in “**common**” and shared by all.
These scientific farmers:

- improved **crop rotation**, which carefully controlled the nutrients in soil
- bred **better livestock**
- invented such machines as the **seed drill** for more effectively planting seeds (Jethro Tull)
Farmers pushed out of their jobs by the enclosure movement either became tenant farmers or they moved to cities.
Better nutrition boosted England’s population, creating the first necessary component of the Industrial Revolution: LABOR!
Once the Industrial Revolution began, farming methods became more efficient.

Examples:

- Tractors for plowing soils
- Reapers for cutting crops
- Threshers for separating grain from stalks
- Motors for pumping water
Second Agricultural Revolution

- Transportation for and storage of crops improved, especially with the invention of refrigerated cars and ships.
- Industrially-produced chemicals for fertilizers, weed killers, and pesticides were also introduced in the 20\textsuperscript{th} century.
KEY TERMS TO REVIEW FROM THIS SESSION

- Primary activity
- Secondary activity
- Tertiary activity
- Pre-industrial societies
- Quaternary activities
- Post-industrial societies
- Agriculture
- Hunters and gatherers
- Neolithic Revolution
- Agricultural hearths
- Vegetative planting
- Seed agriculture
- Plant and animal domestication
- Irrigation
- Yields
- Enclosure movement
- Hedging
- Crop rotation
- Seed drill