First Agricultural Revolution (Neolithic Revolution)

- Early groups of humans were usually nomadic people that followed groups of animals as a food source and gathered plants along the way.
  - A few groups of humans lived by the ocean and didn’t move around. This is because those groups got their food from the sea and surrounding area.

Hearth:

- The first agricultural revolution began at roughly the same time in several different places in the world.

<table>
<thead>
<tr>
<th>Hearth</th>
<th>Domesticated Organism</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>Millet, Chinese Cabbage, Pigs</td>
</tr>
<tr>
<td>Fertile Crescent</td>
<td>Wheat, Barley, Sheep</td>
</tr>
<tr>
<td>Andean Highlands</td>
<td>Potatoes, Manioc, Llamas</td>
</tr>
<tr>
<td>Mesoamerica</td>
<td>Corn, Beans, Squash, Turkey</td>
</tr>
<tr>
<td>Eastern United States</td>
<td>Sunflowers, Pepo Squash</td>
</tr>
</tbody>
</table>

- The Neolithic Revolution also known as the First Agricultural Revolution began about 11,000 years ago in these hearts bringing sweeping change and mostly wiping out the hunter-gather groups.
  - Pros to the rise of farming
    - More food being produced
    - More people being sustained creates population growth
    - Specialization of jobs due to excess food
    - Cities were created
  - Cons to the rise of farming
    - Disease became more common killing more people
    - Upper and lower class system created
    - The lifespan of the average human dropped

For more info see pages 327-328 in the textbook.
Second Agricultural Revolution

Overview
- Was one of three agricultural revolutions
- Occurred in the developed world starting in the middle ages
- Birth of four-course crop rotation
- Closely related to the Industrial revolution
- New Inventions, such as the cotton gin, curved metal plow, horse collar, and seed drill, improved crop yields

Definitions
- Second Agricultural Revolution- The effect of new inventions and methods that improved crop yields in the middle ages
- Four-course crop rotation- Growing different kinds of crops in the same field to increase soil fertility
- Industrial Revolution- The change of small-scale to mass production, and a rapid increase of inventions from the 1800s to 1900s

Where Did the Revolution Occur?
- The Second Agricultural Revolution took place in the developed world along with the industrial revolution, mainly in Europe and the United States.
- Simple inventions (horse collar) made in China

Causes and Effects

<table>
<thead>
<tr>
<th>Causes</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need for new methods to increase productivity and farming efficiency</td>
<td>Four-course crop rotation, which removed the fallow period, and new inventions</td>
</tr>
<tr>
<td></td>
<td>Rural to urban migration due to more automation in farming (Industrialization)</td>
</tr>
<tr>
<td></td>
<td>Farmers and agricultural workers lose their jobs because they are not needed</td>
</tr>
</tbody>
</table>

For more information visit pages 327-328 of the textbook.
Green Revolution

- **What is the Green Revolution?**
  - First stage in the 3rd agricultural revolution
  - Started by Norman Borlaug
  - Occurred between 1965 and 1985
  - Its goal was to help end world hunger through the use of new technologies.
  - Aimed toward lower developed countries (LDCs) like India (at that time)
  - Positively impacted Mexico, India, and Pakistan the greatest.

- **Technology and Ideas**
  - Innovations were shared with governments and agencies in developing countries to help them. In the Gene Revolution, they were patented.
  - The three main crops that were grown were rice, wheat, and corn and they were irrigation-dependent.
  - Chemical pesticides are used to eliminate weeds and insects that are harmful to the growth of crops.
    - However, they develop resistance to pesticides so you have to use more. This is harmful to the environment.
  - Fertilizers are added to the soil to increase fertility.
  - Machinery such as tractors made it easier to farm.
  - High yield crops

**Effects**

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased food production</td>
<td>Pesticides and herbicides reduced soil fertility</td>
</tr>
<tr>
<td>Helped LDCs with hunger</td>
<td>Farmer's debt increased</td>
</tr>
<tr>
<td>India became self-sufficient in grain production</td>
<td>Super weeds that are resistant to pesticides</td>
</tr>
<tr>
<td>Wheat production doubled in Pakistan and India</td>
<td>Cost a large amount of money</td>
</tr>
<tr>
<td>Doubled irrigated land</td>
<td>Used lots of natural resources for mass production</td>
</tr>
</tbody>
</table>

Here is an example of fertilizer being used in India

http://www.india.com/topic/Fertilizers.html

For more information, refer to pages 329-331
Gene Revolution

**What** is it? Part of the Third Agricultural Revolution, the transition from the Green Revolution to more genetic engineering and more company involvement in research and patenting

**When** did it happen? Began in the 1980s, still going on today

**Where** did it happen? Mostly MDCs, especially the United States; most LDCs are unaffected

<table>
<thead>
<tr>
<th>Causes:</th>
<th>Effects:</th>
</tr>
</thead>
<tbody>
<tr>
<td>◦ increase in technology caused by the Third Agricultural Revolution</td>
<td>◦ environmental issues (example: increased use of herbicides)</td>
</tr>
<tr>
<td>◦ great increase in world population created a need for increased food production</td>
<td>◦ disadvantage to unaffected LDCs</td>
</tr>
<tr>
<td>◦ patenting man-made lifeforms became typical</td>
<td>◦ controversy (example: The EU has passed laws banning GMOs)</td>
</tr>
</tbody>
</table>

**Related Terms to Know**

**Biotechnology** - improving livestock and crops through genetic engineering, example: GMOs

**Genetically Modified Organisms (GMOs)** - created by taking genes from one organism and inserting them into another organism, extremely controversial, example: rice containing a natural pesticide from a species of bacteria

**Monsanto** - Company that creates GMOs, has caused controversy because they patent their GMO technology and control most GMOs on the market today

**Terminator Seeds** - GMO seeds created by Monsanto that do not produce offspring; farmers are forced to purchase new seeds each year, recently banned

The World's Biggest GMO Lovers

<table>
<thead>
<tr>
<th>Country</th>
<th>GMO crop growing, in million hectares (2012)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>50</td>
</tr>
<tr>
<td>Brazil</td>
<td>45</td>
</tr>
<tr>
<td>Argentina</td>
<td>25</td>
</tr>
<tr>
<td>Canada</td>
<td>20</td>
</tr>
<tr>
<td>India</td>
<td>15</td>
</tr>
<tr>
<td>China</td>
<td>10</td>
</tr>
<tr>
<td>Paraguay</td>
<td>5</td>
</tr>
<tr>
<td>South Africa</td>
<td>3</td>
</tr>
<tr>
<td>Pakistan</td>
<td>2</td>
</tr>
<tr>
<td>Uruguay</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: ISAAA

www.gmoinside.org

www.news.monsanto.com

**Green Revolution vs. Gene Revolution**

<table>
<thead>
<tr>
<th>Green Revolution</th>
<th>Gene Revolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>◦ had the greatest effect on LDCs</td>
<td>◦ only affected MDCs</td>
</tr>
<tr>
<td>◦ sponsored by governments to alleviate world hunger</td>
<td>◦ incited by companies to gain profit and increase efficiency</td>
</tr>
<tr>
<td>◦ innovations shared with the world</td>
<td>◦ innovations protected by patents</td>
</tr>
</tbody>
</table>

For more information, see textbook pages 328-332
Responses to Modern Agriculture:
Organic, Non-GMO, and Eat Local Movements

<table>
<thead>
<tr>
<th>Organic Foods</th>
<th>Non-Organic Foods</th>
</tr>
</thead>
<tbody>
<tr>
<td>✦ No pesticides or fertilizers</td>
<td>✦ Uses pesticides and/or fertilizers</td>
</tr>
<tr>
<td>✦ Healthier for humans and animals to eat</td>
<td>✦ Unhealthy and not proven to be accurate</td>
</tr>
<tr>
<td>✦ Grown in organic farm</td>
<td>✦ Grown in a feed lot, factory farm, etc.</td>
</tr>
<tr>
<td>✦ Examples- any food that has the certified USDA organic sticker on it</td>
<td>✦ Examples-some fruits and vegetables are most likely non-organic</td>
</tr>
</tbody>
</table>

**100% ORGANIC certified**

**32 Non-GMO Companies**

**Non GMO Project VERIFIED**

<table>
<thead>
<tr>
<th>GMO Food</th>
<th>Non-GMO Food</th>
</tr>
</thead>
<tbody>
<tr>
<td>✦ Genes were modified to fit farmer’s needs</td>
<td>✦ Were raised naturally without any modifying</td>
</tr>
<tr>
<td>✦ Unhealthy to eat</td>
<td>✦ Healthy to eat</td>
</tr>
<tr>
<td>✦ Examples- long lasting tomatoes, golden rice, and sweeter corn</td>
<td>✦ Always has a sticker to verify it’s Non-GMO</td>
</tr>
<tr>
<td></td>
<td>✦ Examples- many granola bars, body care products, and fruit</td>
</tr>
</tbody>
</table>

**Eat Local Movements**
Eat and buy food from local producers to reduce the rate of globalization which also supports the local economy and environment.
✦ Tastes better and fresher
✦ Sometimes it’s healthier than organic food
✦ Can be very expensive
✦ Shuts down export needs of poor countries

For more info, see pages 330-332 and 346-348
Types of Agriculture

**Subsistence Agriculture** - farming system in which outputs are used/consumed by farmers and their family

- **Shifting cultivation** - uses fire to clear vegetation to create fields for crops; based on a cycle of land rotation which includes a fallow period
  - EXTENSIVE
  - Southeast Asia, Africa, Central and South America; tropical and subtropical climates
  - slash-and-burn/milpa/swidden
  - Intercropping - planting 2 or more crops in a field at the same time

- **Pastoralism** - grazing and raising herd animals as the sole/dominant farming activity
  - EXTENSIVE
  - Arid climates; Saharan Desert in North Africa, Middle East, and the Gobi Desert
  - Relies on trade with settled farmers for cereal crops, and other foods
  - Camels, goats, or sheep

- **Wet Rice Farming**
  - INTENSIVE
  - Leading rice exporters: Thailand, Vietnam, India, US (US doesn’t have a small-holder system)
  - Smallholder agriculture - small farms in which the produce is consumed by those in the household
  - Double cropping

- **Smallholder crop and livestock farming**
  - INTENSIVE
  - Asia where rice farming can not occur
  - No double cropping
  - Fewer inputs than wet-rice farming

- **Women in Africa do most of the farming because men are in mines or cities working, and children are at school**

**Commercial Agriculture** - farming system that relies heavily on purchased inputs and in which products are sold

- **Agribusiness** - industry of food production including farmers, processors, distributors, and retailers
  - Vertical integration - when a country controls more than 1 stage in the production or distribution of a commodity

- **Plantation Agriculture**
  - Plantation - large estate on which cash crops are grown

- **Mediterranean agriculture**
  - California/Chile/Mediterranean sea
  - Exs: olives, grapes, citrus fruits

- **Mixed crop and livestock farming** - crops are grown to feed livestock and livestock are sold
  - Corn Belt - Central Ohio to Eastern Nebraska
    - Corn and soybeans were raised for cattle and hogs
    - Specialization of the corn belt:
      - Feedlots
      - Factory Farms

- **Livestock Ranching** - EXTENSIVE, raising large numbers of sheep and cattle for sale

- **Commercial gardening** - INTENSIVE, production of nontropical fruits, vegetables, and flowers for sale
  - Truck farming - large farms that specialize in the production of one commodity

<table>
<thead>
<tr>
<th>Farm Size</th>
<th>Subsistence</th>
<th>Commercial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Activity</td>
<td>Diverse</td>
<td>Specialized</td>
</tr>
<tr>
<td>Scale of consumption</td>
<td>Household, local</td>
<td>National, international</td>
</tr>
<tr>
<td>Purchased inputs</td>
<td>Low</td>
<td>High</td>
</tr>
</tbody>
</table>

For more information (and the rest of the table to the right) see pages 333-342 ☞
Agricultural Regions

Shifting Agriculture - A plot of land is cleared and cultivated
- The land is then left untouched until the natural vegetation returns
- Often uses slash and burn techniques to clear the plot of land
- Negatively affects soil fertility and
- Promotes soil degradation
- Tropical and subtropical climate regions
- Southeast Asia, Central and South America, and Africa.

Mediterranean Regions - Includes tree or vine crop, a grain crop, and live stock
- Think grapes and olives
- Part of commercial gardening
- Includes Italy, Spain, Portugal, and Greece
- California in the US
- Hot, dry summers
- Cool, wet winters

Pastoral Nomadism - Best suited for regions with arid and semi-arid climates
- People move with their herds/flocks
- Based on open grazing of herds
- There are some examples in the Amazonian Rain Forests, Mongolia, and the Sahara Desert

Dairy Belt - The milk cow-producing region (humid continental climate)


Soybeans and Corn Production - Their production zones are basically the same (the soybean production map is shown below and it has a humid continental climate)

http://2.bp.blogspot.com/_EZMGVwURo3M/SwvqAZ3HblI/AAAAAAAAACDB/CGR82UqC8VQ/s1600/Soy_SR_PROR-RC2RC1hor-701729.gif

Bread Bowl - Wheat producing region in the United States (humid continental climate type)

http://www.aggcensus.usda.gov/Publications/2002/Ag_Atlas_Maps/Crops_and_Plants/Field_Crops_Harvested/Wheat/All%20Wheat%20for%20Grain%20Harvested.jpg

For more information see pages 335-341 of the textbook.
Von Thunen

- The model was created by J.H. Von Thunen before industrialization.
- It is based on the following assumptions:
  - The market is in the center of an isolated state
  - The land is flat
  - Farmers transport their own goods to market by wagon

### Bid-Rent Theory

<table>
<thead>
<tr>
<th>Price of Land</th>
<th>Distance from City</th>
</tr>
</thead>
</table>

- The bid-rent theory shows how much a buyer is willing to spend on a land in relation to its distance from the market.
- Further from market = cheaper land
- Closer to market = expensive land

### Intensive Agriculture

- Needs high input of labor/capital/machines
- Crops are closer together
- More crops can be planted in less space
- Example: Produce

### Extensive Agriculture

- Doesn't need as many inputs
- Crops/livestock tend to be more spread out
- Example: Grains, Cattle

- Intensive Agriculture only needs a little land, so farmers can afford to buy the more expensive land.
- Extensive Agriculture needs more land, so farmers had to buy the cheaper land further away.

### Relevance to Today

- In today's cities, there is more than one market.
- Spoilage is no longer an issue because of refrigeration and refrigerated trucks.
- Transportation is easier.
- The cost of transportation no longer has than much of an effect.

For more information, see pages 342-343 of the textbook
Role of Woman in Agriculture

- Women's role in agriculture has been getting more important over time (Mainly in LDCs like Nigeria, Indonesia, and Ghana)
- Women make up most the labor force of agriculture as the men are off at work and the children are at school (Over 43%)
- Even though women do the same work:
  - Women operate smaller farms (1/2 to 2/3 as large)
  - Women keep fewer and smaller livestock and earn less from the livestock
  - Women have a greater overall workload
  - Women have less education due to the gender gap
  - Women have less access to productive resources
  - Women get paid less
- Women can even be banned from managing their own farms
- All of this is due to the gender gap of these countries (Gender gap separates the rights of men and of women)
- If the gender gap was closed:
  - The yields could increase by up to 30%
  - Hunger could decrease

Shown on page 326 of the textbook

Image was found at
The Industrial Revolution

Industrial Revolution (17th-19th century) - a period which rural societies in Europe became industrial and urbanized.

What Happened?

- This marked a shift into special purpose machinery
- Factories and mass productions occurred
- Jobs were created
- Improved transportation/ efficient ways of communication were being developed

Why was Britain the birthplace?

1. Resources: coal, steel, iron
2. Population growth

Factory Working Conditions

- Low wages
- Unskilled workers were easy to replace
- Highly hazardous tasks = health risks

Before The Industrial Revolution

- Manufacturing was done in homes (simple machines)
- Cottage industries a.k.a. small-scale goods produced (ex. Cloths)
- Life revolved around farming
- People resided in small rural communities
  
  *As goods increased new methods of production were needed*

Technology

- The Spinning Jenny (1764)- created by James Hargreaves
- The Steam Engine (1769)- created by James Watt

Diffusion Phases

The diffusion of the Industrial Revolution occurred slowly and caused core-periphery patterns

1st Phase (1760-1880)

- Industrial Revolution moved to France, Germany, the Netherlands, U.S., and Belgium
- Places tied to England by economic activity/ trade

2nd Phase (1880-1950)

- Moved towards Japan, Canada, and Russia (western places/ semi-periphery countries at the time)
- Industrial hubs developed in primarily agricultural places

3rd Phase (1950- Current day)

- Continuation of countries from phase two
- Israel and Pacific rim countries becoming increasingly industrialized

*For more information see pages 298-300 of textbook*
**ECONOMIC SECTORS**

**Economic Sector** – An area of the economy in which businesses share the same or similar product or service. These sectors are broken down into a primary, secondary, tertiary, quaternary, and quinary sector.

<table>
<thead>
<tr>
<th>Primary</th>
<th>Secondary</th>
<th>Tertiary</th>
<th>Quaternary</th>
<th>Quinary</th>
</tr>
</thead>
<tbody>
<tr>
<td>This sector of the economy extracts or harvests products from the earth. It includes the production of raw material and basic foods.</td>
<td>This sector of the economy manufactures finished goods. All of manufacturing, processing, and construction takes place in this sector</td>
<td>This sector of the economy is the industry for service. This sector provides services to the general population and businesses</td>
<td>This sector of the economy consists of intellectual activities</td>
<td>This is a branch of the quaternary sector called the quinary. It includes the highest levels of decision making in a society or economy</td>
</tr>
</tbody>
</table>

**Examples:**

**Primary Examples:**
- Agriculture (both subsistence and commercial)
- Mining
- Hunting and gathering
- Fishing

**Secondary Examples:**
- Metal working and smelting
- Automobile production
- Construction and shipbuilding
- Textile production
- Breweries and bottlers

**Tertiary Examples:**
- Retail
- Transportation and distribution
- Entertainment
- Restaurants
- Tourism
- Insurance
- Banking

**Quaternary Examples:**
- Culture
- Libraries
- Scientific research
- Education
- Information technology

**Quinary Examples:**
- The top executives or officials in such fields as
  - Government
  - Science
  - Universities
  - Healthcare
  - The media
Location Models

☐ Least Cost Theory
  - Developed by Alfred Weber
  - Uses three important factors to determine the location of industry:
    ▶ Transportation (most important)
    ▶ Labor
    ▶ Agglomeration
  - Calculates the best location for a manufacturing plant to maximize profit and minimize costs of factors listed above
    ▶ Weight-losing case – when the finished product is less expensive to transfer than the materials used to make it did - will locate closer to raw materials
      ▶ Ex. Steel mill
    ▶ Weight-gaining case – when the finished product is more expensive to transfer than the materials used to make it did
      ▶ Ex. Bottled soda

☐ Locational Interdependence Theory
  - Developed by Harold Hotelling
  - Industries will move to maximize the number of consumers they have, therefore maximizing profit
    ▶ The industries will move until they are back to back, right in the middle of the market
      ▶ Ex. Ice cream vendors on a beach

☐ Zone of Profitability
  - Developed by August Losch
  - There are areas of high profitability instead of just one place
  - Industries will place themselves in these areas, or "zones" to maximize profit
  - Based on two factors
    ▶ Consumer demand for product
    ▶ Spatial impact

https://www.studyblue.com/notes/n/geographic-models/deck/2760526
Measures of Development

**GNI (Gross National Income)**
- Expresses the total monetary value of goods and services produced by a country.
  - Those operations do not have to take place in the country (ex: if a U.S company operates a plant in China, the profits earned there are counted in the U.S’s GNI)

**TFR (Total Fertility rate)**
- The average number of children a woman is expected to have during her childbearing years given current birth rates.
  - When the TFR is at 2.1, the population is at replacement level (the fertility rate necessary for the population to replace itself).

**IMR (Infant Mortality Rate)**
- The number of deaths of infants under one year of age per 1,000 live births.
  - High IMR’s signal problems with the health care given to expectant mothers and to newborn babies.
  - The IMR is generally higher in LDC’s than MDC’s

**HDI (Human Development Index)**
- The first development measure that includes information about wealth, health, and education of a country’s people. It’s based on the GDP per capita, life expectancy, adult literacy rate, and the gross enrollment ratio.
  - This information is used by the United Nations Development Programme in the Human Development Report (an assessment of the world’s development).

**Economic Sectors**
- **Primary**: Makes direct use of natural resources. Agriculture, forestry, fishing, and mining are all part of this sector.
- **Secondary**: Manufactures all finished goods. All manufacturing and construction is a part of this sector as well as metal working, smelting, car production, and textile production.
- **Tertiary**: Provides services to businesses and the general population. Retail/wholesale sales, transportation, and entertainment are all part of this sector.

**Gender Inequality**
- The GII (Gender Inequality Index) is a comparison between men and women that is specific to inequality. The world average is 45% inequality (0.451)
- The GDI (Gender Related development index) was replaced by the GII in 2010. It shows equality and inequality and uses the same indicators as the HDI but replaces GDP per capita with income.

**Income Distribution**
- Income distribution is how income is divided between groups/individuals.
- Income inequality is a ratio of the richest earnings to the poorest earnings
- There are individual (personal skills/abilities), social (circumstances within society), and policy-related (taxation/labor/immigration) factors that contribute to income distribution and inequality. (Gini coefficient)

**Literacy Rates**
- The percentage of the population over 15 years old that can read and write.
  - The literacy rate in developed countries is more than 90% but around 60% in developing countries.
Rostow's Stages of Economic Growth

Rostow's model has 5 stages:

- **Stage 1: Traditional**
  - The economy is based on subsistence agriculture
  - The economy also has little infrastructure such as banks, to support or enable investment

- **Stage 2: Preconditions for Take-off**
  - A modern society is introduced, but not yet accepted
  - A business class begins and agriculture starts to become more commercialized
  - Productivity begins to increase

- **Stage 3: Take-off**
  - The economy has officially switched from traditional to modern
  - New technologies have been adopted and because of this, manufacturing has expanded
  - Manufacturing has brought in sizable profits and some of these are used for new industries

- **Stage 4: Maturity**
  - A sustainable economy now fuels industry and the ongoing urbanization
  - Different kinds of industries and services are introduced and spread due to the expanding economy

- **Stage 5: High mass consumption**
  - By now the majority of the population is in the service sector
  - Prosperity and consumption is popular
  - Incomes are higher

- Rostow assumed that countries would pass through a series of stages while their economy was developing

- Few countries have followed these stages, but some include the U.S., New Zealand, and Australia

There have been three major criticisms of this model:

1. The model assumes that every country begins at the same economic level
2. The model does not consider that aid from another country could help in the moment, but result in debt later
3. The model assumes that what worked in western countries will also work for the rest of the world

For more information see pages 280-281 of the textbook.

http://povdev-salford2012.blogspot.com/2012_02_01_archive.html
Wallerstein's World Systems Theory

- This theory was created by and named for Immanuel Wallerstein, a 20th century sociologist.
- The theory posits that underdevelopment and dependency are caused by international capitalism.
  - **Capitalism** is an economic system in which the distribution and prices of goods and services are determined by private owners to generate profit, rather than by the state.

Global Capitalism → International division of labor

The international division of labor consists of three tiers:

1) **Core states**
   a. Core states have economic diversity, access to higher education, are technologically advanced, and typically occur in more developed countries. These countries are more industrialized and have less than 10% of their workforce in the primary sector.
      i. Examples would be Western Europe, Canada, and New Zealand.

2) **Peripheral regions**
   a. Peripheral regions are very labor-intensive and tend to have more than half of their workforce in the primary sector. There is very low-skill production, and these countries usually are or once were a colony.
      i. Examples would be Iran, Iraq, and North Africa.

3) **Semi-peripheral regions**
   a. Semi-peripheral regions have elements of both core states and peripheral regions. They have some economic diversity, and help keep the world balanced. Without semi-peripheral regions, the world would become bipolar between peripheral and core regions.
      i. Examples would be India and Vietnam.

Colonialism was a major influence on this system, and explains why some countries today are peripheral and/or semi-peripheral.

- **Colonialism** is when a country exercises total political control over another country to exploit it for its resources and fill it with settlers.

For more information, see pages 282-284
UN Millennium Development Goals

Eight international development goals that all members of the United Nations have agreed to meet by 2015. ¹

- goal of improving the living conditions of people in the least developed countries
- trying to reduce disparities between more developed countries and less developed countries
- eight goals
- seek to promote gender equality and empower women through provision of better women’s healthcare, hunger eradication, basic universal education, and an end to abject poverty

The goals were:

1. eradicate extreme poverty and hunger
2. achieve universal primary education
3. promote gender equality and empower women
4. reduce child mortality
5. improve maternal health
6. combat HIV/AIDS, malaria, and other diseases
7. ensure environmental sustainability
8. develop a global partnership for development

"Context Example: The Millennium Development Goals, fostered by the collective member group of the United Nations, aims to induce comprehensive development in all underdeveloped nations by targeting and attempting to resolve specifically enumerated and highly itemized issues plaguing such states individually."

http://mg.rei.columbia.edu/about/millennium-development-goals

For more information see pages 285-288 of the textbook.

¹ In 2000 the UN held a high profile summit with the goal of improving the conditions of the people in the countries with the lowest standard of human development
The world leaders recognized the principle barriers to economic development and identified 8 key development goals to be achieved by the year 2015
Women and Economic Development

Women In the Workforce

- Women make up around 43% of the agricultural workforce worldwide with Sub-Saharan Africa at nearly 80%
- Women make up nearly 75% of the service workforce in over 50 countries with most acting as home-based workers
- Most women have to work on a job, tend to the family, and run a small personal business at the same time
- Almost 60% of the developing world's women are working in the informal sector of the economy

Women and Inequality

- Measured using the Gender Inequality Index (GII) and the Gender Empowerment Measure (GEM)
- Women usually work longer hours than men
- On average, women in the U.S. will make around 78 cents to a man's $1, this statistic becomes even lower for most all developing countries

Women and Growth

- Microloans - a very small, short term loan at low interest, especially helpful to a start-up company or self-employed person
- Microloans are sent to women to help them create successful businesses in foreign countries

Women and TFR

- With women being forced to do low skilled labor, they have a much lower chance to get a good education
- When women don't get a good enough education, they will be more likely to have more children and have an overall decrease in health

www.economist.com  economix.blogs.nytimes.com
For more information see pages 316 - 318
### International Trade

<table>
<thead>
<tr>
<th>CAUSES</th>
<th>EFFECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>Price Advantages</strong>: Different countries produce more/less of various items based on access to resources and labor. ★ Prices of items made in some countries are cheaper than prices in other countries.</td>
<td>• <strong>Deindustrialization of core</strong>: Core states are militarily strong, have diversified economies, and have a high-skilled labor force. ★ International trade causes loss of diverse economies through globalization.</td>
</tr>
<tr>
<td>• <strong>Complementarity</strong>: Two regions can benefit each other in different ways through trade.</td>
<td>• <strong>Outsourcing</strong>: When a company transfers work to another country to reduce labor costs. ★ typically a secondary economic activity</td>
</tr>
<tr>
<td>• <strong>Comparative advantage</strong>: Ability of one country to produce goods/services for comparatively cheaper prices than other countries.</td>
<td>• <strong>Maquiladoras</strong>: Foreign-owned manufacturing plants that receive duty-free import materials, assembles and processes them, and then exports them. ★ Associated with Mexico, “EPZ with single factory.” Industry has struggled since 2000.</td>
</tr>
<tr>
<td>• <strong>Cheaper labor</strong>: Outsourcing and other methods of hiring cheaper labor from foreign countries to do typically low skill labor.</td>
<td>• <strong>Special Economic Zones</strong>: Export processing zones established in China to make more open economy, developed experimentally, larger than EPZs</td>
</tr>
<tr>
<td>• <strong>Fewer regulations</strong>: Regulations on minimum wage, tariffs, workers’ rights, etc. vary from country to country.</td>
<td></td>
</tr>
</tbody>
</table>

• **Footloose Industries**: Industries that can be relocated and not be affected by factors such as transportation, they don’t have to be located near resources.
  ★ Costs are spatially fixed, i.e. the costs of the products don’t change matter where the product is assembled.
  ★ Examples: Diamonds and computer chips.

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![Footloose Industries Diagram](http://revisionworld.com/gcse-revision/geography/industry/footloose-industry)

Source for graphic: [http://revisionworld.com/gcse-revision/geography/industry/footloose-industry](http://revisionworld.com/gcse-revision/geography/industry/footloose-industry)

For more information, see pages 310-311, 314-315
Growth Poles

An area of a country where specific industries bring employees causing economic growth within the industry as well as the housing market and local economy.

Examples of Growth Poles-

1. Technological Centers - Research and medical centers like the biotech cluster in Cambridge – 65 Biotech Companies like Amgen, Genzyme, and Pfizer.
   Are growth poles because
   • Attracts residents and visitors to work and utilize the facilities.
   • Stimulates local economy by increasing need for housing, food, and retail businesses.
   • Attracts large amounts of funding- Cambridge Cluster receives over 2x the amount of NIH funds than any other region.

2. Universities - The area surrounding universities such as Boston with Harvard, MIT and Tufts.
   Are growth poles because
   • Housing market increases with college student looking for housing.
   • Local economy increases with increased population.

3. Research Triangle - An eight county region in North Carolina including Raleigh, Durham, and Chapel Hill with a population of over 2 million people.
   Is a growth pole because
   • Has many high-tech companies which create job opportunities.
   • Has many universities supplying educated workers.

4. Silicon Valley - A region in California containing the world’s largest technology corporations
   Is a growth pole because
   • Has 26% jobs in tech compared to the national average of 4%. Silicon Valley has an economy driven primarily by high-tech industry.
   • Ranked 1st in high tech job opportunities.
SUSTAINABLE DEVELOPMENT

An approach to resource use and management that meets economic and social needs without compromising the resources for future generations.

Sustainable Development is important because:

- it focuses on the environmental aspects of development, along with the social and economic ones.
- Resources that aren’t as harmful and are renewable, so there are still resources and ways to develop for the future.
- Is not about the here and now but about what we can do for the future generations

PROBLEMS WITH CONVENTIONAL DEVELOPMENT:

1. NATURAL RESOURCES DEPLETION
   - USE OF NONRENEWABLE RESOURCES LIKE COAL AND NATURAL GAS.

2. MASS CONSUMPTION
   - DUE TO THE SECTORS SHIFTING, SERVICES AND MANUFACTURING BECAME PROMENENT.

3. POLLUTION
   - COST AND AFFECTS: HEALTH ISSUES (SHORTENED LIFE SPAN, LUNG ISSUES), CLIMATE CHANGE

4. CLIMATE CHANGE:
   - HEATING OF THE SURFACE, MELTING ICE, AND RISING OCEAN LEVELS

5. SOCIAL AND ECONOMIC INEQUALITY
   - BETTER ECONOMIC STAND POINT FOR OTHERS BECAUSE OF RACE
   - RACIAL SEGREGATION, SEXISM

6. POVERTY
   - ECONOMICALLY UNSTABLE AREAS
   - SMALL AMOUNTS OF JOBS AND MONEY
   - INABILITY TO PROVIDE FOR ONESELF

SOLUTIONS USING SUSTAINABLE DEVELOPMENT:

1. Renewable Resources
   - Use of resources like wind, water, and energy from the sun

2. Decreased product sales to be replaced with increased service-based income.

3. Green Spaces
   - Helps regulate air quality
   - Protects lakes and streams from polluted runoff

3. Renewable resources
   - Wind, water, and sun energy

4. Green spaces
   - Areas with plants and wildlife that are helped to thrive.
   - Helps regulate climate change

5. Social and economic equality
   - Men and women make the same amount
   - Equality rights between all

6. Micro lending
   - Small loans to people who need it
   - Brings money and equality (slight) to the less fortunate

For more information see page 263 of the textbook
US Urban Models

- Edge cities: New downtowns consisting of clusters of business activity that developed in the suburbs surrounding a city.

**Concentric Zone Model:**
- **By Ernest Burgess**
- Made in 1925
- City groups competed for space and resources
- Uses Bid-Rent theory
- Like Von Thunen model where inner rings are intensive and outer rings are extensive
- Lower class lives near CBD and High class lives on outer rings
- Main Transportation: **walking and horse riding**

**Sector Model**
- **By Homer Hoyt**
- Made in 1939
- Has greater emphasis on transportation
- Has a core district with transportation lines
- Industrial, retailing, and residential areas stem from CBD
- Lower class lives in industrial area
- Higher class extends outward from CBD
  - Influences the growth of the city
  - Has education and other resources (ex: parks)
- Main transportation: **street car**

**Multiple-Nuclei Model**
- **By Chauncey Harris and Edward Ullman**
- Made in 1945
- Alternative way of understanding urban structure in US
- Cities have multiple cores
- There are suburban business districts (edge cities)
- High class lives near edge cities
- Lower class lives near manufacturing areas
- Main transportation: **Automobiles**

**Urban Realms/Galactic City Model**
- Term from **James Vance and Pierce Lewis**
- Has multiple urban realms
- CBD is not important
- Megalopolis developments
- Exurbia, boomburbs, metropolitan areas occur
- Areas can go almost anywhere
- Main transportation focus: **highways**

For more information go to textbook pages 240-249
Suburbanization

Suburbanization - the growth of areas on the outside of an urban area.

Suburb - a built-up area around a city

Causes

1. Services offered outside of city
2. Interstate highway system
3. Cheaper land cost away from central city
4. Racial Tensions
5. Declining/low cost of transportation
6. Social Stigma
   i. Single family and detached home ideal

Effects

1. Declining inner city use
2. Infrastructure strain because of need to expand services
3. Uneven development of city
4. Industry/businesses leave city and move to suburbs to meet needs
5. Environmental degradation
   i. Declining greenspace
   ii. Pollution
6. Contributes to urban sprawl and placelessness
7. Overreliance on cars and congestion as a result
8. Residential segregation, a contributor to “White flight”

For more information, visit these pages in the textbook.
Pg. 231-232

Suburbs are residential communities that became the American ideal in the 1950’s. A common trait of suburbs is their uniform appearance. Examples of suburbs are the creations of Mr. Levitt during their time of peak popularity.
Sustainable Urban Growth

**Smart Growth**: governmental regulations that try to prevent sprawl and retain farmland

- Promotes growth within specific boundaries
- Portland Oregon: City council has shortened the city boundaries to stimulate growth inward rather than sprawling out
- A strategy of New Urbanism
- Sometimes calls for Green belts
- Contributes to **Slow Growth Cities**: cities that have a smaller growth rate than the average
  *Cities are no longer accumulating more and more space through sprawl, so the city is decreasing its growth in size and population since less people are moving in

**Advantages**: Walkable neighborhoods, Mixed Land Uses (variety of housing and transportation), Develops a very close community with a strong sense of place

**Disadvantages**: House prices have skyrocketed due to competition for space and the proximity to the market

**New Urbanism**: a type of urban planning that tries to create walkable neighborhoods and eliminate urban sprawl

- Incorporates mixed-use development with several land uses compacted into one area to make everything within walking distance, varying house styles and resident incomes
- Emphasizes the compactness of areas
- Eliminates a need for sprawl and decreases need for automobiles
- Ex: Norton Commons in Louisville; has its own fire station, schools, grocery stores, etc.

**Farmland Protection**: policies enacted by governments that protect farmland and prevent it from being sold into other use

- Uses zoning to identify areas of agricultural land use
  *This forms green belts

**Greenbelt**: a ring of farmland surrounding a city that reduces air pollution and steadily supplies a sufficient amount of food

- Also reduces sprawl because it limits the area’s boundaries
- Very common in western Europe

Textbook Pages (New Urbanism): 254-255
Urban Revival

Gentrification – The processes of rehabilitating old structures in blighted areas instead of demolishing the old structures to build new ones.

About Gentrification

- Usually, wealthy people pay to gentrify a specific area in their city.
  - This involves redoing the look and feel of the landscape and the buildings in the gentrified area.
- Gentrifying an area means an economic boost, wealth to the city, and a renewed area in a town.
- It can have negative effects:
  - People, usually low-income residents, who live in these places, can be displaced because they can no longer afford the more-expensive housing.

This usually occurs in Europe, but still, sometimes in America. In Europe, buildings usually are not torn down, Europeans preserve and restore buildings.

Example – A local example is NuLu, New Louisville, a gentrified area in downtown Louisville.

Urban Revitalization – Also called urban redevelopment, urban revitalization is the opposite of gentrification: the government attains the property, bulldozes it, and then leases or sells it.

About Urban Revitalization

- If buildings in a particular area are blight, or diminished and run-down, the government uses their eminent domain to attain the property, bulldoze it, and then lease or sell it.
- Urban revitalization is usually done by the government and/or the lessee/owner of the property.
- Urban revitalization creates similar positive effects in relation to gentrification:
  - Solves the problem of blight, creates jobs, boosts the local economy, and prevents a community from becoming broken beyond repair.
- It also has a similar negative effect as gentrification:
  - Low-income residents are forced to move.

The majority of urban revitalization projects occur in America, because as mentioned in the gentrification summary, Europeans prefer to fix run-down areas rather than destroy and rebuild them.

To see the same information in a far less helpful way, see the pages below of the textbook.

Urban Revitalization – 249  Gentrification – page 250
Primate Cities vs. Rank-Size Rule

WHAT IS A PRIMATE CITY?
A primate city is a city that has a population twice (or more) the size of the population of the next largest city. It also exercises dominance in economic, social, and political areas.

Example: Mexico City, Mexico, has a population of 20,189,000, which is around 5 times bigger than the population of the next largest city, Guadalajara (4,673,000). Other examples include Bangkok, Thailand; Athens, Greece; Lima, Peru; Seoul, South Korea; Cairo, Egypt.

- ADVANTAGES: agglomeration of economic activity; centralized transportation network; global trade/foreign investment.
- DISADVANTAGES: unequal distribution of resources/population; transportation accessibility is unequal in other cities; development of slums, unsustainable growth.

![World map showing primate cities.](http://en.wikipedia.org/wiki/List_of_primate_cities)

The countries that are grey have primate cities. →
Take note that while mainly LDCs have primate cities, MDCs can have them too.

*A COUNTRY THAT HAS A PRIMATE CITY CANNOT FOLLOW THE RANK-SIZE RULE AND VICE VERSA.*

WHAT IS THE RANK-SIZE RULE?
The rank-size rule tries to explain the pattern of population distribution in certain countries, such that the nth largest city is 1/n smaller than the largest city.

- Created by George Zipf to identify regularities of settlements in a country and to create a graphical description/model of population size distribution in cities.
- Also known as Zipf’s law.

<table>
<thead>
<tr>
<th>City Rank</th>
<th>Population Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10,000,000</td>
</tr>
<tr>
<td>2</td>
<td>5,000,000</td>
</tr>
<tr>
<td>3</td>
<td>3,333,333</td>
</tr>
<tr>
<td>4</td>
<td>2,500,000</td>
</tr>
<tr>
<td>5</td>
<td>2,000,000</td>
</tr>
</tbody>
</table>

Very few examples of this rule exist in the world today. Jordan and Italy most closely follow the rank-size rule, as well as cities in the Indian state Maharashtra.

For more information see pages 235-236 of the textbook.
Urban Hierarchy and Central Place Theory

- **Urban Hierarchy** is a ranking of places on the basis of what services are available. When discussing urban hierarchy urban settlements are classified under 6 different urban settlement categories:

<table>
<thead>
<tr>
<th>Category</th>
<th>Hamlet</th>
<th>Village</th>
<th>Town</th>
<th>City</th>
<th>Metropolitan Area</th>
<th>Megalopolis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Info</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimated population</td>
<td>Extremely small &lt;100</td>
<td>Very small 100-1,000s</td>
<td>Small 1,000s</td>
<td>Medium 10,000s-100,000s</td>
<td>Large 1,000,000s</td>
<td>Very large 10,000,000s</td>
</tr>
<tr>
<td>Additional types of services</td>
<td>Limited (gas station, small general store)</td>
<td>Grocery store</td>
<td>Medical Care and Restaurants</td>
<td>Specialized Services, e.g. bike shops, electronic repair</td>
<td>Complex utility and transportation system</td>
<td>High end retail stores</td>
</tr>
<tr>
<td>Government</td>
<td>Unincorporated</td>
<td>Sometimes managed by local government</td>
<td>Incorporated</td>
<td>Incorporated</td>
<td>Incorporated</td>
<td>Agglomeration of different cities and governments that can span large areas</td>
</tr>
<tr>
<td>Notes</td>
<td>Often found in rural areas with only one or two services per unit.</td>
<td>Slight increase in services available.</td>
<td>A higher impact on the surrounding settlements and economy.</td>
<td>Natural landscape often severely altered</td>
<td>Dense urban core sprawls into less dense suburbs</td>
<td>e.g. Northeast Megalopolis, United States</td>
</tr>
</tbody>
</table>

- **Central Place Theory** (CPT) - a spatial theory, created by Walter Christaller in 1933 that tries to explain the **number, size and location of human settlements**. Christaller assumes that all areas have a homogenous surface, a distance decay mechanism, and all components, such as resources and population are spread out evenly. CPT uses **hexagons** in visual representations due to their ability to fit together without any lost space.

**Key Terms:**
- **Sphere of Influence** - The area that is economically and politically influenced by a state or an organization.
- **Range** - The maximum distance a customer is willing to travel in order to acquire goods.
- **Threshold** - The minimum number of customers required to keep a specific industry profitable.

- **Low Order Goods** - Goods and services that are commonly used such as gas stations and grocery stores are going to have low range and threshold, as people are not willing to travel very far for necessities such as a loaf of bread.
- **High Order Goods** - Goods and services that are often considered luxuries and are not commonly purchased such as a car dealership or high end jeweler. These goods have a high range and high threshold.

Source: [http://www.wolfatthedoor.org.uk](http://www.wolfatthedoor.org.uk)
Megacities, World Cities, Gravity Model

The World's Megacities Are Set for Major Growth
Population growth of the world's top 15 megacities (millions, 2011-2025)

1. **Megacities:**
   a. A city with at least a population of more than 10 million.
   b. **The Largest in Size**
      - Include: Seoul, Mumbai, Mexico City, Tokyo, Beijing, Las Angeles, New York, Sao Paulo, Calcutta, Manila, Rio de Janeiro, Dhaka, and Beijing.
   c. By 2025, 27 megacities are projected in many developing countries such as China and India.
   d. Metropolitan areas can converge to form large megacities.

For more information see page 234 of the textbook.

2. **World Cities**
   a. A central area of global scale importance that influences the world's business with its rank and power. Their position makes for an important portion of global economics.
   b. There are two major aspects that influence World Cities: 1. **Locations and growth of multinational cities;** 2. Growing importance of advanced professional services.
   c. The most well known are Tokyo, London, and New York.
   d. These are the most generalized indicators of world cities:
      i. Recognized center of political power.
      ii. Public and Private Sectors' Production of Knowledge
      iii. Lots of Interaction with other World Cities.
      iv. Established international airport.
      v. State of the art telecommunications technologies and infrastructure.
      vi. Dependence on a two-tiered structure of personnel in firms and businesses that consist of an elite class associated with service sector jobs.
      vii. High-profile reputation as a center for arts and entertainment.

For more information see pages 238-240 of the textbook.

3. **Gravity Model**
   a. Gravitational attraction pull between two continents, countries, states, counties, or even two neighborhoods in the same city.
   b. Larger places attract more people, ideas, and commodities than smaller places.

Equation For Attraction Between Two Places: \( \text{Attraction} = \frac{(\text{population}_1)(\text{population}_2)}{(\text{distance}^2)} \)
City Models Beyond North America

**Griffin-Ford Model:**
- Models Latin American cities in the periphery
- Blends the Concentric Zone and Sector models
- Contains a central CBD split into a traditional market area and a modern CBD
- Commercial Spine extends from CBD and is surrounded by high-income residents
- Mall is located at the end of the commercial spine and forms a node on the edge of the city
- Socioeconomic levels and housing quality decrease with greater distance from the CBD; squatter settlements dominate the periphery (periferico) and disamenity sector
- Shows the large differences between the spaces of privilege and poverty within the city

**De Blij Model:**
- Shows three CBDs (colonial, market, and traditional) that reflect the history of African cities
- Colonial CBD is connected to surrounding area by planned transportation routes
- CBDs are surrounded by ethnic neighborhoods reflecting many of the many tribes in Africa
- Mining and manufacturing jobs are located far from the CBDs and reflect the types of jobs found in African cities
- Satellite townships composed of squatter settlements are located at the edge of the city
- Lack of many socioeconomic classes due to widespread poverty

**McGeer Model:**
- Old colonial port zone and the commercial district around it form the focus of the city
- No formal CBD, elements of a CBD spread throughout the city in clusters such as the government zone, Western commercial zone, alien commercial zone, and mixed land-use zone
- New industrial sectors are being developed on the outskirts of the city
- Residential zones and the hybrid structure of sectors and zones are similar to the Griffin-Ford model
- Includes middle-income housing in a suburban zone unlike the Griffin-Ford model, reflecting the larger middle class in Southeast Asian cities