

VII Modern Commercial Agriculture

A. The 3rd Agricultural Revolution

1 Began in 19th century N. America and saw the globalization of industrialized agriculture and new tech that increased food supply

2. Distributed mechanized farming tech and chemical fertilizers on a global level.

3. Farming and food processing were completed at different sites.

B. The Industrialization of the farming process

1. Commercial Farmers would harvest crop then ship it to a food processor
a) Became much more industrialized.

C. Agribusiness

1. Agribusiness is the combination of the pieces of the food production industry including the farms, processing plants, purchasers, fertilizer lobby, distributors, and Ad Agencies

2. Agribusiness is the modern system of food production involving everything from the development of seeds to the marketing and sale of food products at the market.

3. % of farmers ↓, but large portion of people are involved in Agribusiness
a) 1950 12% farmers, today less than 1%

4. Has utilized division of labor

D. The Green Revolution

1. Began in the 1940's in which new strains of hybrid seeds and fertilizers were invented that dramatically increase crop output.

2. Began with Agricultural experiments that were funded by U.S. charities to find ways to improve Mexico's wheat grain production in order to reduce hunger in the region.

3. Scientists soon found hybrid strains of wheat, maize, and rice that were higher yielding: capable of producing more food at a faster pace.

4. Scientists also developed new fertilizers & pesticides that supported the high-yielding seeds that required special nitrogen-enriching fertilizers and increased protection from diseases & pests.

5. Norman Borlaug won a Nobel Peace Prize for spreading hunger-reducing technology to poorer regions of the world.

6. Farmers were able to grow more food per land area at a faster pace.

a) Grain Production increased 45% 1945-1990

b) Asia increased rice production by 66% by 1985

c) India was able to supply corn, wheat & rice by 1982

7. Hunger and famine were reduced, but not eliminated

a) still have social and transportation issues and social issues

E. Economic Downsides to the Green Revolution

1. Green Revolution Tech has reduced the amount of human labor needed on the farm.

2. The high-yield crop strains are often more prone to viruses and pest infestations, leading to higher levels of crop failure.

3. Many of the higher yielding Green Revolution crops such as rice and ~~wheat~~, wheat are not farmable in dryer African regions.

a) Research on more African-appropriate crops have not kept pace.

b) less than 5% use Green Revolution seeds

F. Environmental Downsides to the Green Revolution

1. Caused pollution and soil contamination problems $\frac{1}{2}$ they drain through the ecosystem

2. Workers that ~~work~~ are exposed to these chemicals have suffered health problems

3. Green crops require more watering, thus water resources are strained.

4. $\frac{3}{4}$ Green seeds are widely adopted, the genetic diversity is declining.
a) inc. vulnerability to disease

5. Green Crops need more tech which requires more fuel.

G. Biotechnology

1. Agricultural biotechnology is using living organisms to produce or change plant or animal products.

2. Genetic modification is a form of biotechnology that uses scientific genetic manipulation of crop and animal products to improve agricultural productivity.

3. Recent events have led to plant and animal cloning

a) Already have pesticides + fertilizers integrated into their DNA

b) Drought resistant crops

4. Biorevolution