An ancient Egyptian wall painting depicting a man plowing a field. The man, on the left, is shown in profile, wearing a white kilt and holding a long wooden handle. He is pulling a large, spotted ox with a curved horn. The ox is harnessed to a wooden plow. In the background, there are stylized representations of a house and a tree. The entire scene is set against a yellowish-brown background.

History of Crop Production

*A brief synopsis of 10,000
years of feeding
humankind*

Why production agriculture?

OR

The rise of major civilizations?

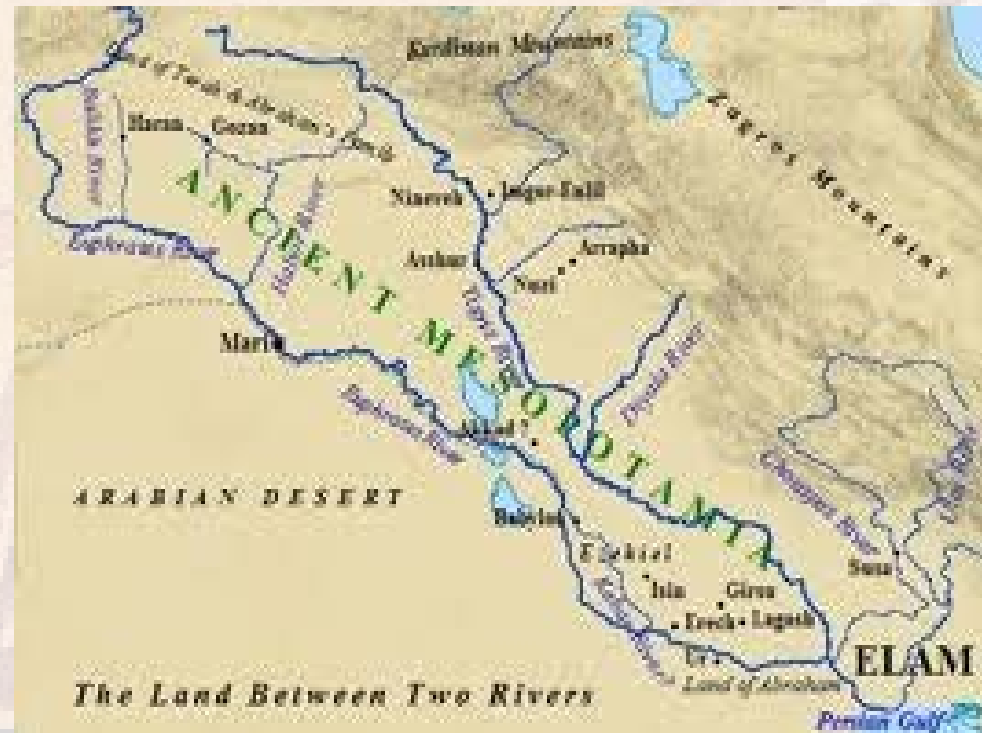
- The shift from hunter/gatherers to farmers was gradual and only where nature provided the opportunity.
- Based predominately on cereal grains
 - Easy to obtain and harvest
 - High energy content
 - Ability to store for relatively long periods
- Utilization?

The Sumerians

~3500 – 2334 BC



- The fertile crescent – region between Tigris and Euphrates rivers, Mesopotamia
- Wide fertile floodplain between the 2 rivers
- Predominately wheat
- Shifted to barley
- *First records of agriculture*

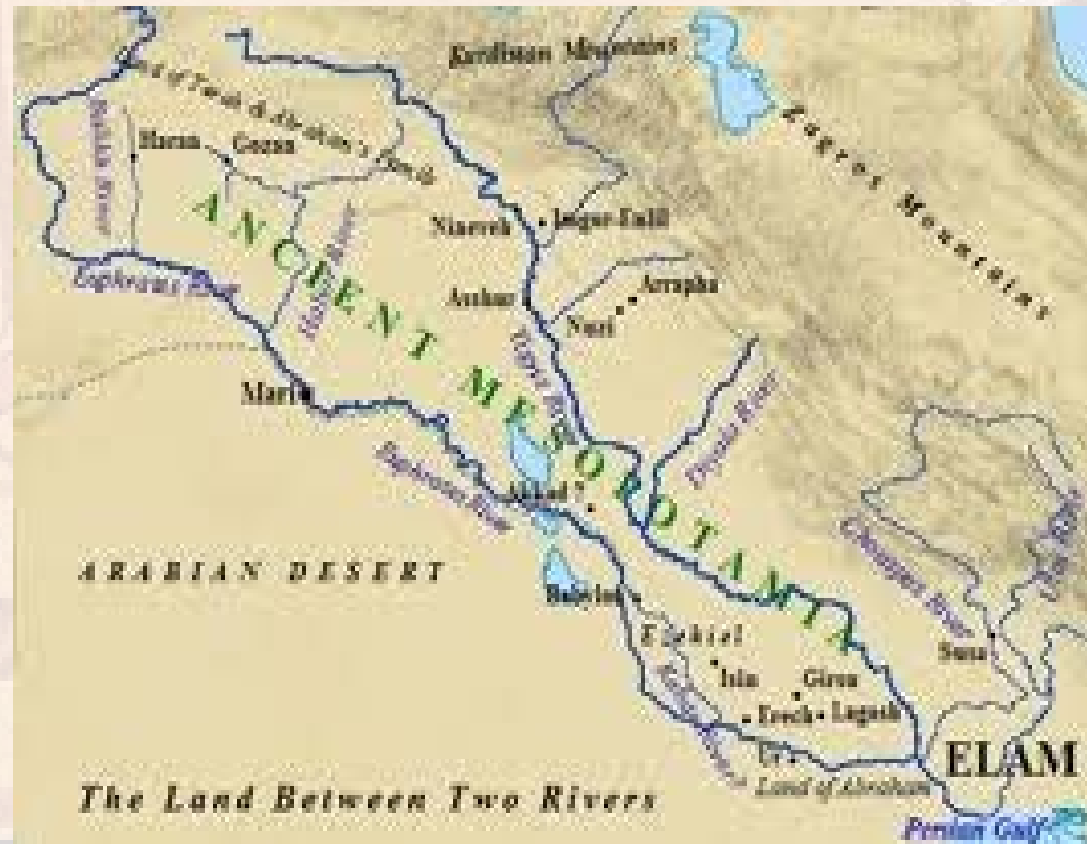


The Sumerians

~3500 – 2334 BC



- The rivers provided water, soil and nutrients
- However, river flow was not synchronized with crop growth
- Complex system of irrigation canals and tillage
- Flooding and eventual salting of soils lead to demise



Egyptians

~3000 – 1070 BC



- Centered on the Nile river delta/floodplain
- Wheat and barley, but eventually vegetables, etc.
- Crop growth matched the timing of river flooding; the Nile was everything
 - Minerals, nutrients, water and weed control



Chinese 221 BC – 220 AD

- Yellow river – loess soil from northern arid soils of the Gobi
- Primarily millets, not wheat



Why Millets?

- The loess soils were poor in nutrients, especially nitrogen and organic matter
- The Yellow river was highly prone to flooding
- Developed complex systems for fertility management
 - C4 grasses, less nitrogen required
 - Manures – poultry, swine and human (night soil)
 - First recorded use of legumes to fix nitrogen

Rice

- Further south along Yangtze river – fed soldiers, elite
- Annual flooding provided weed control, symbiotic relationship with water weeds to provide nitrogen



Bantu of Africa

~400 BC – 300 AD

- Swidden Agriculture is shifting cultivation of crops
 - Millets, sorghums, yams
 - Continuous migration to new areas
- Shifts to savannas – superior technology thru ability to forge metal





Mayans

~150 BC – 910 AD

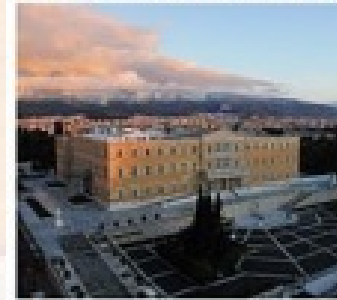
- Series of city states in central America
 - Relied heavily on maize
 - Swidden agriculture
 - Squash and beans
 - Raised beds (chimapas) to allow production in flooded areas
 - Use of lime aided in diet



Greeks and Romans

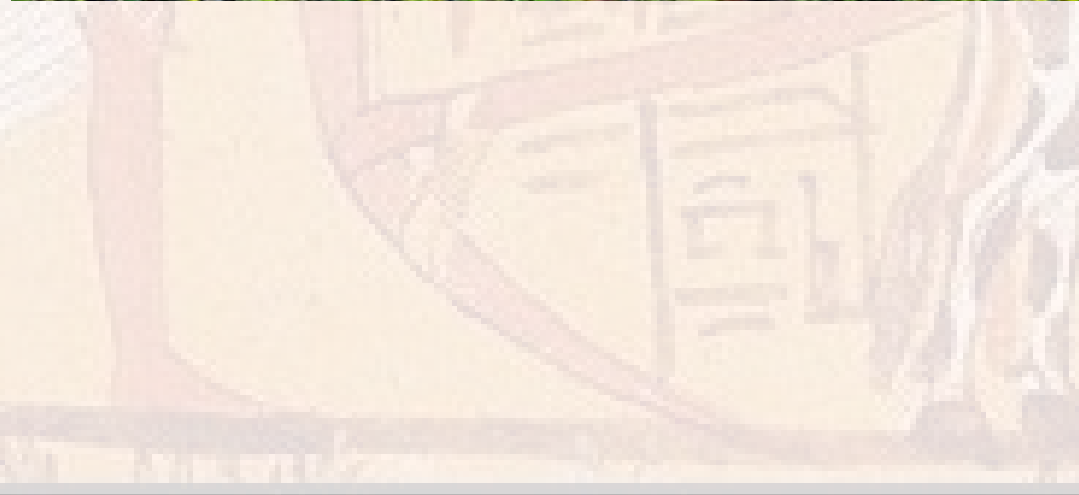
550 BC – 410 AD

- Exploitation at its finest from an agricultural standpoint
- Barley and wheat were initially grown on fertile hillsides surrounding cities
- Eventual erosion dictated shift in crops



Greeks and Romans

550 BC – 410 AD



The British Empire

1700 – 1900's.....

- Changed rotational schemes to support greater livestock numbers
- Increased the use of horses
- Doubled traditional crop productivity



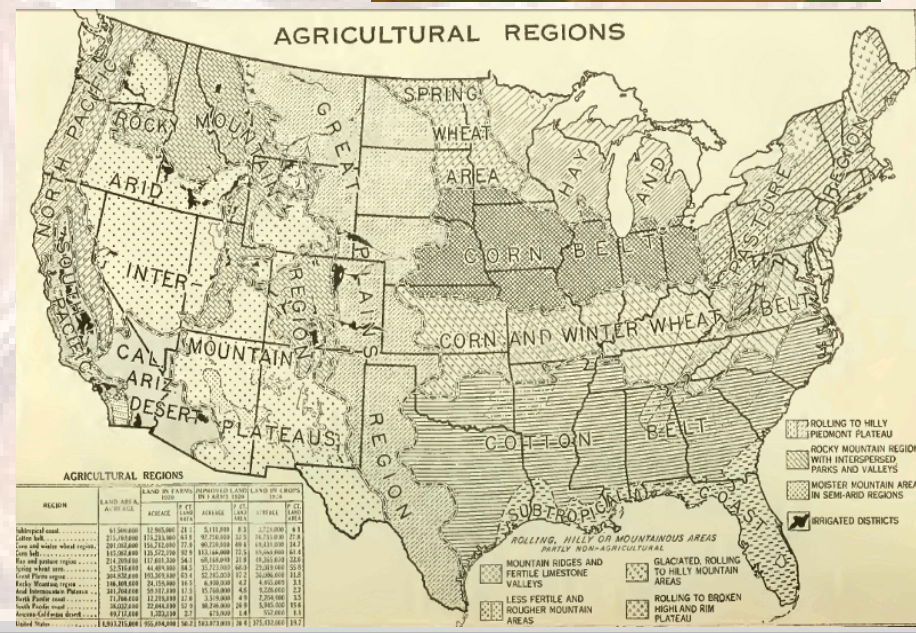
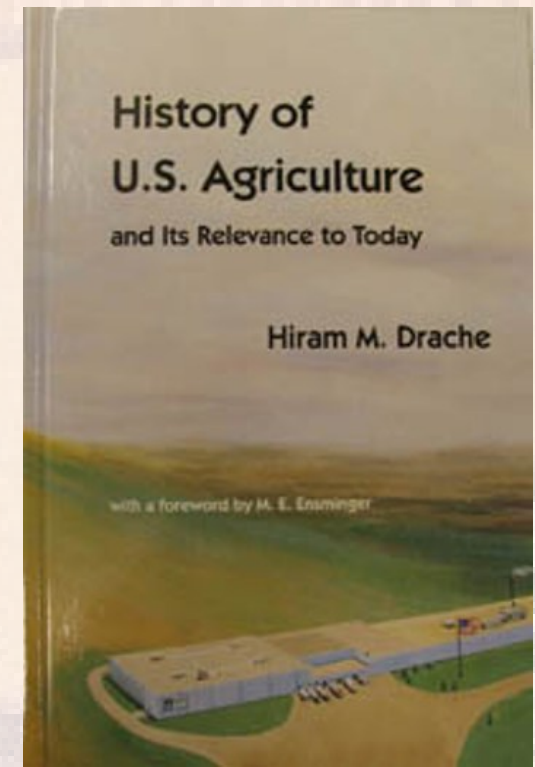
The British Empire 1700 – 1900's.....

- Resulted in a feedback loop where more people were free to enter the city, providing the labor for the industrial revolution
- In turn more mechanization and research went back to agriculture, further increasing productivity



U.S. Agriculture

- Followed similar path as British and Europe, but to a greater extent
- 75% of people were farmers in 1790, < 2% now
- Mechanization – 1837 John Deere plow, 1834 McCormick reaper
- 1862 - US Department of Agriculture created and Homestead Act granted 160 acres to settlers



Bread, Beer & the Seeds of Change

Agriculture's Imprint on World History

Thomas R. Sinclair
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Author of *An Edible History of Humanity*