Agriculture and Culture – An Historical Overview

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Agriculture

 Agriculture is the process of producing food, feed, fiber, energy and other desired products by cultivation of certain plants and the raising of domesticated animals (livestock).
Agriculture is also known as farming.

(en.wikipedia.org/wiki/Agriculture)



Culture

- The raising of plants or animals (e.g. agriculture, horticulture, aquaculture).
- The product of cultivating organisms in a nutrient medium.
- The attitudes and behavior that are characteristic of a particular social group or organization.
- A particular society at a particular time and place.



Our Focus

 The production and consumption of food, feed and fiber in particular societies or cultures in particular times and places.



Factors Underlying the Broadest Pattern of History



Figure 4.1. Schematic overview of the chains of causation leading up to proximate factors (such as guns, horses, and diseases) enabling some peoples to conquer other peoples, from ultimate factors (such as the orientation of continental axes). For example, diverse epidemic diseases of humans evolved in areas with many wild plant and animal species suitable for domestication, partly because the resulting crops and livestock helped feed dense societies in which epidemics could maintain themselves, and partly because the diseases evolved from germs of the domestic animals themselves. Jared Diamond in focuses on geographic and cultural differences in which agriculture is a significant factor.

J. Diamond. 1999. Guns, Germs and Steel (pp. 87 and 288)



Rural and Urban Cultures in Time





Types of Societies, Culture and Agriculture

50 (C)	Societies								
	Band	Tribe	Chiefdom	State		Band	Tribe	Chiefdom	State
Membership					Religion				
Number of people	dozens	hundreds	thousands	over 50,000	Justifies klepto- cracy?	no	no	yes	yes→no
Settlement pattern	nomadic	fixed: 1 village	fixed: 1 or more villages	fixed: many villages and cities	Economy Food production	no	no→yes	yes→intensive	intensive
Basis of relation- ships	kin	kin-based clans	class and resi- dence	class and residence	Division of labor Exchanges	no reciprocal	no reciprocal	no→yes redistributive ("tribate")	yes redistribu-
Ethnicities and languages	1	1	1	1 or more	Control of land	band	clan	("tribute")	("taxes")
Government					Constant.				
Decision making, leadership	"egalitarian"	"egalitarian" or	centralized, hereditary	centralized	Stratified	no	no	yes, by kin	yes, not by kin
Bureaucracy	none	none	none, or 1 or	many levels	Slavery	no	no	small-scale	large-scale
Mananalu of			2 levels	vec	Luxury goods for elite	no	no	yes	yes
force and information	110	110	yes	yes	Public architec- ture	no	no	no→yes	yes
Conflict resolu- tion	informal	informal	centralized	laws, judges	Indigenous lit- eracy	no	no	no	often
Hierarchy of settlement	no	no	no→para- mount village	capital	A horizontal arro ties of that type.	w indicates that t	he attribute varies	between less and mor	re complex socie

J. Diamond. 1999. Guns, Germs and Steel, pp. 268, 269.



Ancient Near Eastern Agriculture and Culture

Mesopotamia (modern-day Iraq)

- 7,000 years ago and 11 empires ago
- Agriculture practiced by irrigation with water from the Tigris and Euphrates Rivers
- Irrigation systems spread from rivers and required constant maintenance
- War captives used to clean canals
- 21,000 sq mi irrigated, 21,000 35,000 people
- Invasions \rightarrow breakdown of irrigation \rightarrow silting of canals \rightarrow increased soil salinity \rightarrow disaster



The Fertile Crescent





J. Diamond. 1999. Guns, Germs and Steel, pp. 135.



Ancient Agriculture and Culture

- Transfer of technology from the Near East to Africa 5,000 years ago.
 - Techniques: Sowing and reaping edible plants and domestication of animals.
 - Transfer of technology from Valley of the Jordan River to the Valley of the Nile River.
 - Subsequent transfer along coast of Maghreb and to Sudan and westward through the Sahel Corridor.



Ancient African Agriculture and Culture



Around 5,000 years ago, new agricultural techniques were successfully transferred from Semitic people of the Jordan Valley to Semitic people of the Nile Valley.

Subsequently, agricultural techniques were transferred westward among the Hamito-Semitic people of the Maghreb, to the south to Nilo-Saharans, and then west along the Sahel Corridor and east to the Cushites in what is now Ethiopia.

C. McEvedy. 1995. The Penguin Atlas of African History.



Ancient and Modern Egyptian Agriculture

Agriculture in Ancient Egypt under the Pharoahs

- Farming by flood irrigation of Nile River for 6,000 years.
- Deposition of silt eliminated soil erosion as a problem.
- Fertility of soil restored annually with sediment.
- Agriculture in the Modern Egyptian State
 - Aswan High Dam, completed in 1970, controls world's longest river and ended flooding.
 - 90,000 Sudanese Nubians relocated.
 - Flooding damage on floodplain eliminated.
 - 137 million acre-ft (169 billion m³⁾ impounded.
 - Farmers must use fertilizer to meet nutrient needs of crops.
 - Schistosomiasis associated with stagnant water of the dam.
 - 95% of Egypt's population lives within 12 miles of Nile River.
 - Nile Delta erodes because of lack of incoming sediment.



Domestication of Indigenous Crops in Africa and Migrations in Africa



The Times Atlas of World History. 1984. p. 44





Manioc & Sweet Potato, Staple Foods of the Cameroonian Culture



A. Denis. Au-delà du regard: le Cameroun. 1989



Banana, A Food of Many Cultures



A. Denis. Au-delà du regard: le Cameroun. 1989



Clash of Urban and Agrarian Cultures in the USA

The American Civil War, 1861 - 1865



An Urban Culture at Night

Figure 1.1 Nighttime lights of the USA is a composite of satellite images from the Defense Meteorological Satellite Program that illustrates the spatial distribution of population. Available through the DMSP homepage at www.ngdc.noaa.gov/dmsp/dmsp.html.

*(***)FDC**

170 Years in a Few Minutes

... Or how the USA went from the sickle to the combine, freeing its people to go to the cities.

170-year Transition from Sickle to Today's Harvesting Combines

Sickle, or reaping hook. One man cuts 0.5 – 1.0 acres/day.

Cradle, 1776-1840. One man cuts 2 acres/day.

Scythe. One man cuts 3 acres/day.

This first McCormick reaper of 1831 required only 2 people for operation (a person to ride the horse and a man to rake the cut grain from the platform), it cut as much grain in one day as 4-5 men with cradles or 12-16 men with reaping hooks.

http://www.vaes.vt.edu/steeles/mccormick/harvest.html#patent

Cutting and Threshing

The first combine was invented by Hiram Moore in 1838. It took several decades before the combine came into wide use. Early combines were driven by as many as 16 or more horses.

http://www.historylink101.com/lessons/farm-city/combine.htm

A man in a modern combine can harvest hundreds of acres in a day

Contrasting Cultures and Agriculture

Long and short histories . . .

Less and more mechanization . . .

Slower and more rapid rates of change . . .

Plowing in Two Cultures

Advertisement for 255-hp tractor with "all new ActiveSeat™ which further enhances your ride by isolating you from as much as 90 percent of vertical seat movement. True breakthroughs in suspension technology." USA, 2001 Tilling the soil for the early rains and wheat production, Amhara Region, Ethiopia, 2000

Harvesting in Two Cultures

Harvesting wheat for food by sickle near Saly Village, S. Gonder, Amhara Region, Ethiopia, 2000

Harvesting wheat in the USA

Collecting the Harvest in Two Cultures

Collecting harvested pearl millet for food in the Sahel, West Africa

UFDC

Collecting harvested sorghum in Riley County, KS, 2001

Threshing the Harvest in Two Cultures

Threshing wheat for food near Saly village,S. Gonder, Amhara Region, Ethiopia, 2000.

*(***)FDC**

Harvesting and threshing sorghum for cattle feed in Nebraska

Energy from Agriculture in Two Cultures

Solar energy stored in plants as chemical energy is consumed by humans, livestock, and poultry and is used as a source of fuel.

Conclusions

As during the past 10,000 years, now and in the future, the many aspects of agriculture will differ from culture to culture.

Rural, more labor-intensive cultures rely less upon mechanization and require more human and animal labor to produce food, compared to urban cultures.

Energy is a key element of agriculture in all cultures.

