

Chapter 8 Agriculture

Know the **themes** and how they are used with Agriculture.

Agricultural Regions: What/Where types of Agriculture occur– There are more but focus on these:

Nomadic herding (subsistence) dry or cold

Swidden Agriculture (aka. Shifting or Slash and Burn (subsistence) tropics/rainforests

Peasant grain, root and livestock farming (subsistence)

Paddy rice farming (subsistence and commercial)

Market gardening (commercial) near urban areas

Grain farming (commercial)

Dairying (commercial) row crops can't grow (rocky soils or too wet like Oregon coast

Plantation (commercial) near shipping lanes and easy access for export

I will likely ask for country names using various types of agriculture for the map portion of test. To help you study, think about the natural environment and the level of industrialization of regions to determine commercial vs. subsistence technologies.

Domestication defined: A long process of human selection and breeding of wild plants and animals for a desired outcome.

For example: I want sweeter bananas. I choose the sweetest bananas with smallest seeds from all over my local rainforest and plant their seeds or chunks of their root/stem in my orchard. These human *selected* plants will cross-pollinate among themselves and after several generations evolve into sweeter banana varieties. To do this, I allow new banana shoots to re-seed and spread. *I allow* new plants grow to taste their fruit. If they are sweeter and better *I let them grow*. If not, *I select and destroy* the less desirable plants. I do not allowed to them to pollinate with other trees. The trees in the orchard must be isolated to keep the “best” pollen in the area and NOT polluted by random pollen. Over many generations domestication occurs.

If every farmer does this and trades domesticated crops (as they did for thousands of years) the **variety and diversity are vast**. Since domestication *is thousands +year process*, the plants have greater **stability**. Today, patents prevent trading. US Laws passed in the 1970s to prohibit the practice.

Locating Centers of Domestication p.224

Fig. 8.14 Ancient centers of production *also known as heath areas*. Be able to match a domesticated crop to the hearth for the map.

Fertile Crescent – wheat, barley, rye, olives, apples, Sheep and goats (herd animals)

Andes Mts. (potatoes and squash)

Middle and North America Maize (corn) tomatoes, beans

Africa -Yams, sweet potatoes, rice, coffee, groundnuts (peanuts)

New Guinea Sugar cane, bananas

China – Rice, and (Maize although controversial)

SE Asia bananas, rice

Hybridization – how is it accomplished? Is it different from domestication? How has it impacted landscapes? Diversity of crops? Size of landholdings? Use of fertilizer and fossil fuel?

Sustainability?

GM crops ; video notes

Sustainability

Agricultural landscapes

Cadastral patterns p. 238

Survey patterns see p. 240 fig 8.29

Long-lot Survey fig 8.20

US rectangular survey fig 8.31 (Township and Range system) fig. 8.28

Metes and Bounds Survey fig.8.31 and p. 239

Green Revolution know what it is.... Read p. 226 and **read my story ...**

Hybridization began with the Green Revolution around the 1930s among US and Russian scientists. Technologies were developed to change domesticated seed crops into a much faster process of “hybridization” but under extreme isolation. Hybridized crops *increased yields dramatically* and most *western* farmers began to purchase high-yield seeds sold by new tech businesses. Thousands of years of domesticated seeds and the vast diversity became minimal due to disuse as seed crops and was consumed as animal food (destroyed). The “new seeds” had promise of a better life on the farm, so people *unknowingly* allowed the destruction of thousands of years of human development. A major problem with hybridized seeds is that they are unstable due to the short-time frame of hybridization process. Another problem is cost.

With higher yield producing more income, Green Revolution farmers could afford new farming innovations like tractors. The team of draft horses became obsolete and harnesses and hames were hung in the barns to decay. The successful farmers drove tractors, bought gasoline to plant field and harvest crops in record time. In fact tractors saved *so much time* that they began to buy-up or clear more land to form bigger farms.

The government liked the productivity and possibility to export crops and sell abroad where countries needed food. The government subsidized the building of lock and dam on the Mississippi, Ohio, Missouri and Columbia Rivers to ship grain from the interior by barge. At the same time, railroad lines were built to every small agricultural town in America that had a grain elevator - a collection point. Grain driven into town and sold by the farmer to middlemen went by rail to the barges on the rivers to carry it for export. This is when grain began to be sold on the Chicago Board of Trade a version of a “stock market” for commodities (corn, wheat, pork bellies, sugar, beef). Chicago was the center of all this rough new world in transition. Carl Sandberg’s famous poem is below.

The Green Revolution changed the American Landscape as much as anything on earth. Plowing the prairies beyond the 100th Meridian gave us the dust bowl, migrations, building of dams to irrigate deserts of the American West from Oregon to Arizona, mega farms. Swamps of Central Valley of California were drained and reclaimed into farmland as was Klamath Marsh and lower Klamath Lake in Oregon. We moved water from Northern California to Southern California, from Wyoming and Colorado to Arizona and Los Angeles. The Green Revolution helped build the city of Los Angeles.

Hybridized crops ruled until early 1990 when the first GMO test plot was revealed in California. The guy who did the work on a tomato field for the media could not get any attention. Monsanto was selling GM crops to farmers long before the general public was aware. Currently it is still “the Green Revolution” responsible for major landscape changes. With unknown long-term effects we could see resistance overcome and mutations create invasive species with no natural or chemical enemies. Much like the super-bugs that are beyond control of antibiotics due to overuse and mutations.

Yikes! <http://www.fao.org/docrep/003/x9602e/x9602e07.htm>

Chicago (Poem is optional reading)

By [Carl Sandburg](#)

Hog Butcher for the World,
Tool Maker, Stacker of Wheat,
Player with Railroads and the Nation's Freight Handler;
Stormy, husky, brawling,
City of the Big Shoulders:

They tell me you are wicked and I believe them, for I have seen your painted women under the gas lamps luring the farm boys.
And they tell me you are crooked and I answer: Yes, it is true I have seen the gunman kill and go free to kill again.
And they tell me you are brutal and my reply is: On the faces of women and children I have seen the marks of wanton hunger.
And having answered so I turn once more to those who sneer at this my city, and I give them back the sneer and say to them:
Come and show me another city with lifted head singing so proud to be alive and coarse and strong and cunning.
Flinging magnetic curses amid the toil of piling job on job, here is a tall bold slugger set vivid against the little soft cities;
Fierce as a dog with tongue lapping for action, cunning as a savage pitted against the wilderness,

Bareheaded,
Shoveling,
Wrecking,
Planning,
Building, breaking, rebuilding,

Under the smoke, dust all over his mouth, laughing with white teeth,
Under the terrible burden of destiny laughing as a young man laughs,
Laughing even as an ignorant fighter laughs who has never lost a battle,
Bragging and laughing that under his wrist is the pulse, and under his ribs the heart of the people,
Laughing!

Laughing the stormy, husky, brawling laughter of Youth, half-naked, sweating, proud to be Hog Butcher, Tool Maker, Stacker of
Wheat, Player with Railroads and Freight Handler to the Nation.

Agriculture is key to every country and person in the world.

From class

Primary Industries (known as a level of economic development) how people make a living)

Primary levels refers to extraction of natural resources and includes **agriculture**. Taking something off or from the land. Other examples are logging, mining, fishing, oil drilling, rubber tapping.

Secondary Industries. How people make a living. This level includes **processing and manufacturing**. Examples: processing **cane or sugar beets** to sugar, making **tater-tots**, drying **coffee beans, milling flour**, milling boards, making windows, smelting ore, canning/freezing fish, refining oil, boiling rubber sap into latex. Making finished or partially finished products.

Tertiary Industries. This level includes **services** for *both producer and consumer services* for Primary and Secondary industries. *Producer* or business examples are Transportation/Communication (building roads/**railroads, dams, port facilities**, cell towers, computer networks, K-14 education (preparing workforce), construction, banking, advertising, legal services, **consumer services** include **bakery grocery stores**, retail stores, barber/beauty shops, tourism etc. Many *producer* services trickle down to *consumer* services such as attorneys and banking, roads.

Quaternary Industries Development of new technologies employing scientists, high level decision makers such as, Warren Buffet, Bill Gates. *Research and high-level decision makers focus on ALL Primary, Secondary, and Tertiary Industries to develop new technologies for all levels to improve output and efficiency.* For example: **GMO crops for agri-business**, developing bi-products oil, fracking technologies, more efficient fish harvesting, refining new ways to process foods, develop new consumer products, develop new financial products such as derivatives and junk bonds☺ new communication systems. These are found in high-tech centers (Silicon Valley and government think-tanks)