The Ultimate AP® Human Geography Unit 5 Cheat Sheet

5.1 Introduction to Agriculture

Environment Shapes Farming

Physical geography: climate, soil, terrain & water decide what can grow → farm type varies by climate zone.
Mediterranean ag: dry summers, mild wet winters → olives, grapes, figs, citrus & winter wheat (Italy, California, Chile).
Tropical climates: heavy rain leaches soil → shifting cultivation or plantations of cash crops.

Intensive vs. Extensive

Intensive: high labor &/or capital per unit of land, small plots, high yields; near markets or in dense regions.
Extensive: low inputs per unit of land, large areas, lower yield per acre; far from markets or in harsh climates.

Intensive	Extensive
Market gardening (truck)	Shifting cultivation
Plantation agriculture	Nomadic herding
Mixed crop/livestock	Ranching
Wet rice (subsistence)	Large-scale grain
Dairy near cities	Transhumance

Key Farming Types

Shifting cultivation (slash & burn, swidden): clear & burn forest, farm 2–3 yrs, move on as soil fertility drops.
Pastoral nomadism: herders move animals for pasture in arid lands (Sahel, Central Asia); **transhumance** = seasonal up/down-slope moves (Alps, Andes).
Plantation: large tropical estate, 1 export cash crop (coffee, bananas, palm oil); colonial roots, often foreign-owned.
Ranching: commercial grazing of cattle & sheep on vast dry land (US West, Argentine Pampas, Australian outback).
Market gardening (truck farming): fruits & vegetables for nearby cities; high labor, often migrant workers.

⚠ Intensive/extensive = inputs per acre, NOT farm size or wealth. A huge Kansas wheat farm is extensive.

✓ FRQ: name the climate → explain how it limits/enables a practice → give a real place, e.g., Sahel herding.

5.2 Settlement Patterns & Survey Methods

Rural Settlement Patterns

Clustered (nucleated): homes grouped in a village, fields outside; shared defense, services & social ties (European & Asian villages, New England towns, kibbutzim).
Dispersed: farmhouses spread out on own land; common w/ commercial farms & US Homestead Act grants.
Linear: homes strung along a road, river, canal or coast for access (long-lot farms, rural Quebec).
Why it matters: clustered → more social contact & services; dispersed → isolation, but farmers live on their land.

Land Survey Methods

Method	Shape	Where
Metes & bounds	irregular, natural	Orig. 13 colonies
Township & range	square grid	US Midwest, West
Long lot	narrow strips	Quebec, Louisiana

Metes & bounds: boundaries follow natural features (streams, trees, rocks) & distances → irregular parcels.
Township & range (Land Ordinance 1785): 6×6-mile townships of 36 sections, 1 section = 1 sq mi = 640 acres.
Long lot (French): narrow strips running back from a river → every farm gets water access & transport.

Reading the Landscape

Grid roads on a map or air photo = township & range; winding lines = metes & bounds; strips on a river = long lot.
Inheritance: dividing land among all heirs → ever-smaller plots; primogeniture (eldest gets all) keeps farms whole.
Enclosure (Britain, 1700s): open fields merged into fenced private farms → dispersed settlement, fewer peasants.
Legacy: survey patterns persist in property lines, county shapes & road grids centuries later, visible from the air.

⚠ Survey method ≠ settlement pattern: long lots often create a linear settlement, but they're different terms.

✓ Stimulus FRQs love aerial photos: name the system, then explain its cultural origin (British, US gov't, French).

5.3–5.4 Origins, Diffusion & the 2nd Ag. Revolution

1st (Neolithic) Ag. Revolution

Domestication (~10,000 yrs ago): plants & animals bred for human use → surplus, permanent villages, pop. ↑.
Sauer: **vegetative planting** (cuttings, SE Asia) likely came before **seed agriculture** (SW Asia wheat).
Animals: dogs 1st; goats, sheep, cattle & pigs in SW Asia; llamas in the Andes; horses on the Central Asian steppe.

Hearth	Crops / animals
Fertile Crescent	wheat, barley, goats, sheep
Indus River Valley	wheat, cotton, zebu cattle
East Asia (Yellow, Yangtze)	millet, rice, soybeans, pigs
Southeast Asia	taro, yams, bananas
Mesoamerica	maize, beans, squash
Andes (Peru)	potato, quinoa, llama
West Africa (Sahel)	sorghum, yams, millet

Diffusion: crops spread by trade, migration & conquest; the **Columbian Exchange** moved maize & potatoes east & wheat, sugar, cattle & horses west after 1492.

2nd Agricultural Revolution

When/where: Britain c. 1700s–1800s, tied to the Industrial Revolution; diffused to Europe & N. America.
Innovations: seed drill (Tull), iron/steel plow, McCormick reaper, Norfolk 4-field crop rotation, enclosure, later tractors.
Enclosure: common lands fenced into private farms → efficient, but landless peasants moved to cities.
Effects: ↑ yields & food surplus → fewer farmers needed → rural-to-urban migration → factory workforce & pop. growth.
Food processing: canning & later refrigeration let food travel farther → bigger, more distant markets.

⚠ Hearths were independent inventions, not one origin that diffused; name crops w/ their own hearth.

✓ Causation chain: 2nd Ag. Rev. → surplus labor → urbanization → Industrial Revolution (link Units 2, 5, 6, 7).

5.5 The Green Revolution

What It Was

Green Revolution (1940s–1970s): new tech diffused to developing countries to ↑ food output; led by plant scientist **Norman Borlaug** (Nobel Peace Prize 1970).
Inputs: high-yield variety (HYV) seeds of wheat, rice & maize + chemical fertilizer, pesticides, irrigation & machines.
Where: Mexico (wheat), India & Pakistan (wheat, IR8 "miracle rice" 1966), Philippines, much of Asia & Latin America.
3rd Ag. Revolution: Green Rev. + mechanization + biotech → farming driven by science, chemicals & capital.

Positive vs. Negative

Positive	Negative
Yields ↑ 2–3×	Water & aquifer depletion
Famine ↓ (India)	Fertilizer runoff, pollution
Food self-sufficiency	Loss of crop biodiversity
Cheaper food prices	Costly inputs → farmer debt
Less new land cleared	Favored large, rich farms

Uneven spread: little success in Sub-Saharan Africa b/c staples (cassava, sorghum) got less research, poor roads, little credit & irrigation in rain-fed farm regions.
Social effects: mechanization cut farm jobs → rural-to-urban migration; land consolidated by wealthier farmers.

Its Legacy

Biotech & GMOs extend the same idea (e.g., Golden Rice, Bt cotton) → same debate: yield vs. sustainability & control.
Today: India's Punjab faces falling water tables & tired soil from rice-wheat cycles → push to diversify crops.
Africa: AGRA (2006) pushes HYV seeds & fertilizer to small farms; results so far are mixed & debated.

⚠ Don't say the Green Revolution "ended world hunger"; hunger today is mostly about access & poverty, not output.

✓ FRQ "evaluate" prompts: give 1 benefit + 1 cost w/ a specific country (e.g., Punjab: yields ↑, groundwater ↓).

5.6–5.7 Production Regions & Spatial Organization

Subsistence vs. Commercial

Subsistence: grown mainly for the farm family; common in developing regions; little capital, lots of labor.
Commercial: grown for sale; large, specialized, capital-intensive farms in developed regions; few farmers per acre.

Region	Main type
US Corn Belt	Mixed crop & livestock
Great Plains, Pampas	Grain, ranching
SE Asia river deltas	Intensive wet rice
Central America, SE Asia	Plantations
Mediterranean Basin	Mediterranean ag
Sahel, Mongolia	Pastoral nomadism

How Agribusiness Works

Agribusiness: corporations control farming as one system (seed, inputs, farming, processing, shipping, retail).
Vertical integration: 1 firm owns several stages of the chain (Tyson raises, slaughters & packages chicken).
Economies of scale: bigger output → lower cost per unit → large farms outcompete small family farms.
Commodity chain: links from farm → processor → distributor → consumer, often crossing many countries.
Contract farming: farmers grow to a company's specs at set prices; firm supplies seeds or chicks & buys output.
Subsidies: gov't payments keep farms afloat & steer crops (US corn, EU CAP) → surpluses dumped abroad.

Specialization

Monocropping (same crop yearly) & **monoculture** (1 crop dominates a region) ↑ efficiency, ↑ pest & market risk.

⚠ Large-scale commercial farms are replacing small family farms; explain why (scale, capital, subsidies).

✓ Map stimulus: match a region's climate to its farm type before naming economic causes like subsidies.

5.8 Von Thünen Model

The Model (1826)

Von Thünen: land use around 1 central market is set by transport cost & perishability → concentric rings.
Assumptions: "isolated state," flat land, uniform soil & climate, 1 market, no roads/rivers, farmers maximize profit.
Key logic: perishable or bulky goods → near market; durable goods & animals that walk → far away.

Ring	Land use	Why there
1 (center)	Dairy, market gardens	perishable
2	Forest (wood)	heavy, bulky fuel
3	Grains, field crops	light, keeps
4	Ranching, livestock	animals walk
Beyond	Wilderness	too far, no profit

Land rent: R = Y(p − c) − Yfd; rent ↓ as distance (d) ↑ b/c freight (f) costs more → top-rent use wins.
Variables: Y = yield, p = market price, c = production cost per unit, f = freight rate, d = distance.

Modern Applications

Milkshed & truck farms: dairy & vegetables still cluster near big cities (e.g., NJ, Central Valley near LA/SF).
Global scale: core markets (W. Europe, US NE) as the "city"; perishables close, grain & beef from Argentina, Australia.
High-value goods now fly long distances (Kenyan roses to Europe) → rings stretch to a global scale.

Limitations

Why it breaks down: refrigeration, trucks & air freight, varied terrain & soil, gov't subsidies, multiple markets.
Still useful: explains why land near cities costs more & is farmed intensively; rivers or roads warp the rings.

⚠ Forest is ring 2, not ring 4: wood was heavy & needed daily for fuel & building in the 1800s.

✓ FRQ: explain a ring using distance + transport cost + perishability; then 1 modern limitation.

5.9–5.10 Global System & Consequences

The Global System

Global supply chains: food grown in one country, processed in another, eaten in a third; set by trade deals & corporations.
Export commodity dependence: relying on 1–2 crops (Côte d'Ivoire cocoa, Ethiopia coffee) → hurt by price swings.
Political forces: subsidies, tariffs, quotas & trade deals shape what is grown; US/EU subsidies undercut poor farmers.
Fair trade: guaranteed minimum prices & standards for producers, often coffee, cocoa & bananas.
Core–periphery: periphery grows cash crops for core consumers; profits flow to core firms (neocolonialism).
Land grabbing: foreign firms & states lease farmland in Africa & SE Asia to grow food for export home.

Environmental Consequences

Practice	Effect	Example
Irrigation	salinization	Aral Sea basin
Overgrazing	desertification	Sahel
Clear-cutting	deforestation	Amazon (soy, beef)
Fertilizer use	runoff, dead zone	Gulf of Mexico
Draining wetlands	habitat loss	Everglades
Pumping groundwater	aquifer depletion	Ogallala Aquifer

Conservation

Soil conservation: terracing, contour plowing, no-till, cover crops, crop rotation & windbreaks cut erosion.
Shifting & pastoral systems: sustainable at low density; more people → shorter fallow → soil & forest loss.

⚠ Desertification = land degradation in dry areas from human use, not just "deserts expanding" on their own.

✓ Pair a practice → its effect → a place; that 3-part answer earns most "explain" points on Unit 5 FRQs.

5.11–5.12 Challenges, Women & the Exam

Contemporary Challenges

Biotech & GMOs: ↑ yields & pest resistance vs. biodiversity loss, seed patents & consumer distrust.
Sustainable & organic: fewer chemicals, better soil; **value-added** crops (organic, fair trade) earn higher prices.
Local food movements: farmers' markets, CSAs, urban farms → shorter chains, lower food miles, $ stays local.
Food insecurity: lacking reliable access to enough food; **food deserts** = urban/rural areas w/o affordable fresh food.
Dietary shifts: rising incomes → more meat → more grain for feed, CAFOs (factory feedlots) & water use.
Aquaculture: fish farming ↑ protein supply but pollutes coasts (shrimp farms cut mangroves in SE Asia).
Urban agriculture: rooftop, vertical & community gardens fight food deserts (Detroit, Singapore).

Women in Agriculture

Role varies by region: women ≈ 40%+ of farm labor in developing countries (Sub-Saharan Africa, S. Asia).
Barriers: less land ownership, credit, education & tech; equal access could ↑ yields 20–30% (FAO).
Double burden: women grow much household food + do unpaid care work; often uncounted in farm stats.
Change: microcredit (Grameen Bank, Bangladesh) & land-rights reforms give women more control & income.

Exam Format

Section	Qs	Time	Weight
MCQ	60	60 min	50%
FRQ	3	75 min	50%

FRQs: 1 w/ no stimulus, 1 w/ 1 stimulus, 1 w/ 2 (map, chart, photo); 7 pts each. Unit 5 = 12–17% of MCQs.

⚠ "Describe" ≠ "explain": explain = describe + why/how, w/ a clear cause-effect link to a real place.

✓ Always name scale (local, national, global) & a real place; vague answers w/o a place lose points.