Unit 5: Agriculture & Rural Land-Use Patterns & Processes

Topic 5.1 – Introduction to Agriculture

1. Complete the table below for intensive farming practices.

Type of Agriculture	Location of Agriculture	What does it produce?	Explanation of Agricultural practice
Market Gardening	Southeastern United States & Southeastern Australia	Apples, asparagus, cherries, lettuce, mushrooms, & tomatoes	Long growing season & a humid climate. Most of the food is processed, canned, or frozen, & sent out to the markets on trucks.
Plantation	Tropical & subtropical Africa, South Asia, & Southeast Asia	Cotton, sugarcane, coffee, rubber, tobacco, bananas, tea, coconuts, & palm oil	Large commercial farms in developing countries focus on one or two crops. Owned by companies in developed countries, products are sent to the MDCs from the plantation.
Mixed Crop/ livestock	Central Europe, & the Midwest in the United States of America	Corn, soybeans, beef, eggs, milk, & pork.	Crops & livestock are integrated. Crops are fed to animals, animals supply manure to improve the soil, the majority of farmers income comes from the sale of animals.

2. Complete the table below for extensive farming practices.

Type of Agriculture	Location of Agriculture	What does it produce?	Explanation of Agricultural practice
Shifting Cultivation	Southeast Asia, South America,& sub-Saharan Africa	Rice, maize, millet, sorghum, & cassava	Farmers clear land for planting, farms grow crops on the cleared land, after nutrients are depleted the land is left to fallow.
Nomadic Herding	Southwest Asia, North Africa, Central Asia, & East Asia	Sheep, goats, camels, & horses (obtain grain through trade)	Farmers migrate with their animals across the landscape.
Ranching	Western North America, Southeast Latin America, Central Asia, sub-Saharan Africa, & South Pacific	Cattle, sheep, & goat	Originally ranching was focused on free range herding of animals. Today more ranchers have shifted to closed fields, or in places like the United States CAFOS and industrial systems.

3. Explain how the physical environment can influence the type of agriculture practiced in a location. In places with a dry air climate, farmers are forced to practice pastoral nomadism due to lack of arable land. In places with a longer growing season and a mild climate we see horticulture more popular. In regions with more access to arable lands we see more sedentary agriculture practiced.

Topic 5.2- Settlement Patterns and Survey Methods

1. Create a map or image that shows a clustered, dispersed, and linear settlement pattern.

Clustered	Dispersed	Linear
		

2. Explain how each of the following rural survey methods are used.

Metes & Bounds	Parcels of land where the metes are the lines and bounds describe geographic features of the land.
Township & Range	A system of dividing large parcels of land evenly across farmlands. (Traditionally from a center point).
Long Lot	When land is divided into narrow parcels that stretch along a waterway or road.

3. How does agriculture impact rural land-use patterns? Large farms can stretch across the landscape, which may have farms focus on the production of a few crops. Depending on the survey method used, we may see more variety of agricultural products produced, and land being utilized in a variety of ways with the fragmentation of land.

Topic 5.3- Agricultural Origins and Diffusions

1. How did the Columbian Exchange impact life in the new world? New diseases were brought to the new world, which decimated many populations. There was also the introduction of horses, cows, sugar cane and other foods/ livestock which changed life in the new world.
2. How did the Columbian Exchange impact life in the old world? Crops like the potato became a main part of many Europeans diets, this allowed for a population boom because the potato plants produced more food per acre. Other crops like corn, tomatoes, squash, and more also came over to the old world as well.
3. How did the Agricultural revolutions help diffuse different species of animals and plants around the globe? As society continued to advance and technology grew we were able to trade more with other societies. During the second agricultural revolution we saw new inventions that made it possible for us to bring food/livestock farther and more efficiently, i.e. steam engines. During the green revolution new agricultural techniques were practiced around the world allowing new strains of crops to be produced reducing food shortages.
4. Identify two different species of animals/plants that originated in the following hearths.

	Plants/Animals
Fertile Crescent	Barley, wheat, pigs, cattle, oats, goat
Indus River Valley	Walnut, sheep, broad bean
Southeast Asia	Coconut, mango, with rice and millet being developed in East Asia
Central America	Pepper, potato, alpaca, cotton, maize, sweet potato

Topic 5.4- The Second Agricultural Revolution

1. What historical event caused the second agricultural revolution? The industrial revolution
2. Explain what the enclosure movement is and how it impacted food production. This happened in England when small farms were consolidated into larger farms. This allowed for more output of food and pushed people to urban areas. This equaled more food for society and a population boom for society.
3. Identify two ways the second agricultural revolution impacts each of the following categories below.

	Impact from the revolution
Social	Many people left their rural lifestyles and moved to urban areas. Families spent more time working in factories and in the city. This caused overcrowding challenges in cities and concerns for worker rights.
Economic	Less farmers were needed to produce food, which allowed for more citizens to be able to work in other industries. This caused a rise of urbanization which led to new jobs, products, and production moving from the household to the assembly line.
Health	New cities become overcrowded, which led to the diffusion of new diseases due to poor sanitation, cramped living conditions, and lack of knowledge on healthcare. Work conditions also lacked safety measures to protect workers.

Topic 5.5- The Green Revolution

1. Define the green revolution. New inventions rapidly diffused throughout society allowing new productive agricultural techniques to be used. The most popular was the introduction of new higher-yield seeds and expanded use of fertilizers.
2. How did the green revolution change the production of food? Food production increased due to a shift to industrial farming, this allowed for food production to out pace population growth.
3. Identify a positive and negative consequence the green revolution had on human populations. Increase in food production & globalization, which allowed for more trade of food. Decrease in family farms & possible increase in food contamination.
4. Identify a positive and negative consequence the green revolution had on the environment. Food can be produced in a smaller geographical area, with more foods being able to handle harsh environments. More pollution to the environment due to the industrial system, including more inefficiencies with the use of resources. Also possible animal rights abuses, due to the mass production of food.

Topic 5.6- Agricultural Production Regions

1.What are three characteristics of intensive farming practices? They require a large amount of labor, technology, and money to produce food.
2. What are three characteristics of extensive farming practices? Agriculture practices require less labor, technology, and money to produce food.
3. Explain the difference between subsistence and commercial agriculture. Subsistence farming focuses on production of food for the family, while commercial is for profit agriculture.
4. How does the bid-rent theory impact the location of different types of agriculture? By analyzing the amount of land needed and the cost of transporting the goods to the market. Farmers will grow crops that require more land with cheaper transportation costs farther away from the city.
5. Why are more farmers switching to monocropping over monoculture? It allows farmers to specialize more and continue to produce large amounts of food while reducing their overhead costs.

Topic 5.7- Spatial Organization of Agriculture

1. How have advancements in technology led to small farms being replaced by commercial agricultural operations? Industrial farms have become more efficient, more profitable, and have more access to resources that reduce costs. This is due to the advancements in transportation, fertilizers, GMOs, and antibiotics.
2. Explain how commodity chains are used to create agricultural products. Today the industrial food system is set up as an assembly line. For example, corn is grown on farms, sent to feedlots to feed cattle, cattle are then killed in the slaughterhouse, sent to the assembly line to be prepared for packaging, packaged, & sent out to consumers.
3. Identify two different ways technology has changed the agricultural sector. Increased number of large factory farms, increased use in fertilizers/pesticides, more reliance on genetic modification, and more trading of agricultural products on the global market.

Topic 5.8- Von Thunen Model

1. Draw and label the Von Thunen Model.

2. Explain how transportation costs play a role in the Von Thunen Model. Products that require high transportation costs are more likely to be located near the market, while easier to transport products are located further away.
3. What types of agriculture do not fit in the Von Thunen Model? Specialty crops & seasonal crops.
4. Explain why some people believe the Von Thunen Model is no longer relevant and why some argue it still works. Technology has changed the way we produce food causing the shift of some industries to be located more closely/further away from the market. Society also no longer trades an isolated market, due to globalization countries around the world trade for food.

Topic 5.9- The Global System of Agriculture

1. How has globalization changed how we eat food? Seasons have disappeared in many markets due to the increase in technology and trade between states. We have also seen more specialization than ever before in the food space, with countries electing to trade instead of producing all of their food on their own.
2. Identify two ways in which international trade deals can impact agriculture in a society. Allow for more unique foods to be traded. Which can influence the diet of society, example NAFTA introducing a large amount of avocados to the United States of America. Also can change the food supply of other countries, changing their food needs and their agricultural output.
3. Why would some states be more dependent on agricultural imports compared to other states? Depending on a state's physiological and agricultural density. Some countries are more prone to being dependent on trade for food. This could be due to a lack of funds to support large scale agriculture, lack of arable land, or stability in their local markets.

Topic 5.10 Consequences of Agricultural Practices **(Continued on the next page)**

1. Explain what desertification is and why it happens. The act of arable land deteriorating and becoming a desert. This happens due to overpopulation, droughts, or agricultural practices that deplete all nutrients in the land.
2. Define soil salinization. The process in which excessive amounts of salt accumulate in the soil, damaging plant roots and destroying arable land.
3. Identify two conservation efforts society can do to combat the impact agriculture has on the environment. Reduce reliance on fertilizers/ pesticides, do not over graze agricultural lands, create government policies that promote water conservation/management, or promote sustainable agricultural practice like organic farming.
4. What are three societal effects agricultural practice has on society? Societies' agricultural practices change the diets of citizens, can promote or hinder healthy citizens, change cultural traditions of citizens, and can reduce malnourishment of citizens.

Topic 5.10 Consequences of Agricultural Practices

5. Complete the table below.

Agricultural Practice	Describe the practice	Consequences
Slash and Burn	Practiced in shifting cultivation, here farmers clear land by slashing and burning the vegetation.	Often leads to deforestation, increased CO2 output, and is not sustainable for larger populations.
Shifting Cultivation	Involves farms growing crops on a cleared field for only a few years, then abandoning the field for a new field.	Leads to deforestation, increase in CO2 output, not sustainable for large populations.
Terraces	The practice of growing crops on the sides of hills/mountains by planting on man-made steps	Can cause soil erosion, lead to mudslides, and require large amount of labor to construct and maintain
Irrigation	The process of moving water from one geographic location to another geographic area in need of water.	Can lead to water pollution, overpopulation in certain geographic areas. But also helps create more stable farms, with higher yields.
Deforestation	The removal of trees to make room for agricultural use or for future settlements.	Leads to higher CO2 output, destroys unique ecosystems, and leads to less biodiversity.
Draining wetlands	The process in which water from a wetland is removed to repurpose the land for use of an urban area or production of agricultural products.	Can lead to more pollutants getting into waterways due to a reduction of filtration and water run off. Unique ecosystems are removed, causing a loss of biodiversity.
Pastoral Nomadism	Farmers herd and migrate with their animals, there is no permanent pasture area.	Can create issues with the governments who do not wish to have nomadic people moving through their borders. Also hard to support larger populations.

Topic 5.11- Challenges of Contemporary Agriculture (Continued on the next page)

1. How have the following agricultural innovations have positively & negatively impacted the field of agriculture.

	Positive Impact	Negative Impact
GMO	Improve the yield of crops for farmers. Allows for crops to grow in harsh environments and can increase food supply.	Can reduce effectiveness of antibiotics, tend to create a reliance on corporations, and can cause issues with trade on the global market.
Aquaculture	Allowed for an increase production of fish without the risk of overfishing	Are expensive to set up, have high energy costs, use large amounts of antibiotics and chemicals that can hurt local environments.
Fertilizer & Pesticides	Allow for crops to be protected from insects and other environmental factors. Also creates higher yielding fields.	Can destroy local environments, have unintended consequences on the food being produced and local wildlife.

Topic 5.11- Challenges of Contemporary Agriculture

2. How have current food trends impacted the production of food? In Europe many countries require the labeling of genetically modified foods, due to the belief that GMOs are not as nutritious. This has changed how Africa produced food, because their main market is Europe. However, in the United States the majority of the food is now genetically modified and food production has become more industrialized.

3. Identify two ways in which dietary preferences have shifted. Recently more people have become concerned with genetically modified foods, the use of fertilizers & pesticides, use of antibiotics and growth hormones in animal feed. This has led to a push towards organic farming, free range animals, and more sustainable farming techniques.

4. Define urban farming. The integration of growing crops/animals in an urban environment.

5.Identify challenges that each of the following categories are experiencing when it comes to food supply.

	Challenges to food supply
Social	Cultural traditions have led to certain food production methods to be promoted or rejected changing the supply of food for society.
Environmental	Developing countries put a larger environmental strain on arable land due to the increase in population, and the reliance on agricultural based economies. This causes desertification to occur which reduces the output of food.
Economic	Agriculture is expensive, with the increased use of technology, fertilizers, pesticides, the cost of farming has increased. Developing countries struggle to produce enough food to feed their population, with many farmers turning to other markets with higher profit margins.
Political	Governments have used price ceilings to reduce the price of food. This has caused farmers to produce food, drugs, or other agricultural products for export where profit margins are higher. This reduces the amount of food being produced for citizens.

Topic 5.12- Women in Agriculture

1. What type of countries have a higher percentage of women working in Agriculture? Developing countries that offer less opportunities to women.

2. Identify an obstacle in each of the following categories that prevent women from pursuing equality.

	Obstacle
Political	Government policies that restrict opportunities for women in society. Preventing them from gaining economic independence, education, and other things needed for women to become independent and productive members of society.
Economic	Societies that do not allow for women to recieve an education lack economic opportunities in society. This forces women to be dependent on their husbands, focus on agricultural production, or being viewed as caretakers of the home.
Cultural	Women not being viewed as equal, due to cultural traditions. This reduces the opportunities for women in society.