

AP Human Geography: **Unit 5 Agriculture**

HANNAH SINCLAIR

UHS

2019-2020

THE CULTURAL LANDSCAPE, RUBENSTEIN, 11TH ED.



Bellwork:

Think of something you or a family member has grown.

Maybe herbs, a garden, in your yard, or for a science project.

What did you grow and describe the process.

Agenda:

Notes: Origin of Agriculture

Objective:

You will be able to summarize the agricultural revolution.

TUBI:

Americans today consume 17.3 billion quarts of popped popcorn each year! The average American eats about 68 quarts!



CHAPTER 10 AGRICULTURE



Origin of Agriculture



The Beginning

Agriculture: deliberate modification of Earth (through plants/animals) for food or money

Crop: any plant cultivated by people

Invention

Before agriculture - hunter/gather nomads

Agricultural Revolution: 8000 BC humans settle and domesticate plants/animals

- **Fertile Crescent:** Egypt, Israel, Lebanon, Syria, Turkey, Iraq, Iran – FIRST AGRICULTURAL HEARTH



Why?

Environment: end of ice age!

Culture: we prefer to live in one place



Results:

- Increase in reliable food supply
- Increase in population
- Job specialization
- Solidify gender roles

Extensive Agriculture: dispersed, wide spread ranching and farming



Video: Crash Course Agricultural Revolution

https://www.youtube.com/watch?v=Yocja_N5s1I



Cultivation Hearth

Plants

- SW Asia: lentils, olives, wheat



Cultivation Hearth

Plants

- SW Asia: lentil, olives, wheat
- E Asia: Rice, soybeans



Cultivation Hearth

Plants

- SW Asia: lentil, olives, wheat
- E Asia: Rice, soybeans
- Sub-Saharan Africa: sorghum, yams



Cultivation Hearth



- Latin America: squash, maize, potato

Animals



In chronological order:

- Dog, sheep, goats, pigs, cattle, horse, chicken, llama



Geographic Connections

How does agriculture differ between developing and developed countries?

Subsistence vs. Commercial

Subsistence Agriculture: food grown so the farmer can eat (developing countries)

Commercial Agriculture: food is grown to sell (developed countries)

Differences

% Farmers in Labor Force

- Need farmers to feed population
- MDC = 5%, LDC = 44%



Technology:

- MDC = LOTS OF MACHINES
- LDC = mostly hand tools and animal power
- Transportation
- chemicals (fertilizer, pesticides, hybrid plants)



Discuss

What are the differences between subsistence and commercial farming?

Come up with an example for each.

Summary:

Describe the agricultural revolution and its impact.

Explain the different challenges to agriculture based on a country's development.

New Day

Bellwork:

What did you have for breakfast?

What's your favorite thing to have for breakfast?

How do you like your eggs cooked?

Agenda:

Notes: Agricultural Distribution: LDC

Objective:

You will be able to explain how the geography of a country influences the agriculture.

TUBI:

Like snowflakes, no two cows have exactly the same pattern of spots.



Diet



Video: Eggs (BuzzFeed)

<https://www.youtube.com/watch?v=jWhcXB5hYDE>



What do people eat?

Depends on:

- Level of development (MDC's eat more food)
- Physical conditions of environment (no bananas in Siberia)
- Cultural preferences

2. Total Consumption

Dietary energy consumption: how much food you eat

Cereal Grains: grass that has grain we eat
(Wheat, Rice, Maize)

Protein: MDC = Meat, LDC = cereal

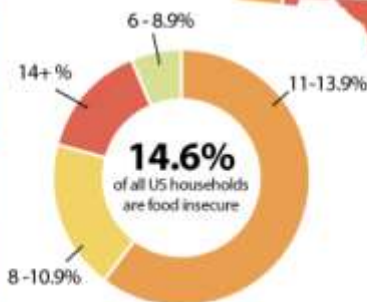
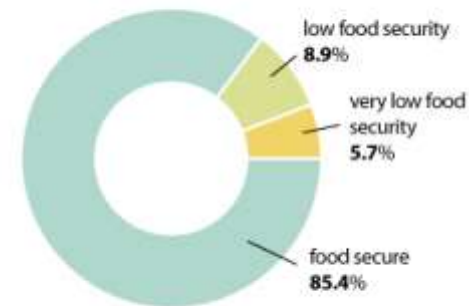
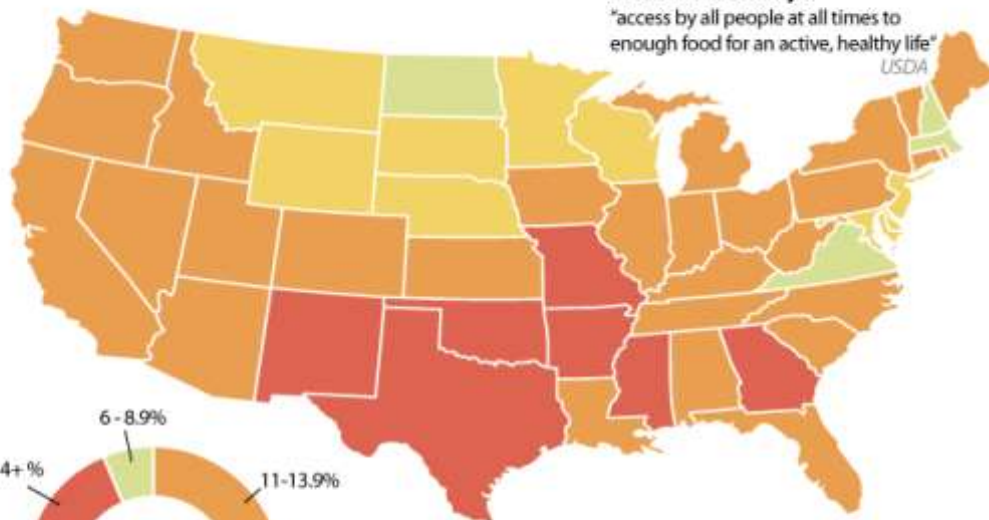
Nutrition and Hunger

Food security: physical and economic access to safe and nutritious food at all times



food insecurity in the US

what is food security?
 "access by all people at all times to enough food for an active, healthy life"
 USDA



states with the **highest rates** of food insecurity

Mississippi	17.9%
Texas	16.3%
Arkansas	15.9%

states with the **lowest rates** of food insecurity

North Dakota	6.9%
Massachusetts	8.3%
Virginia	8.6%

US households by food security status (%)

42%
of households that live below the poverty line are food insecure

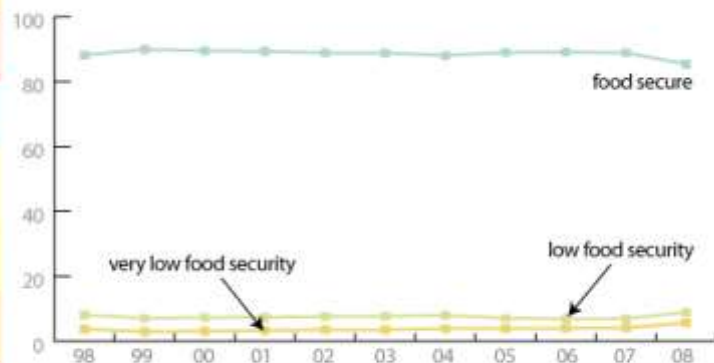
21%
of households with children are not food secure

17.7%
of households within principal cities are not food secure

49.1 million people live in food insecure households...

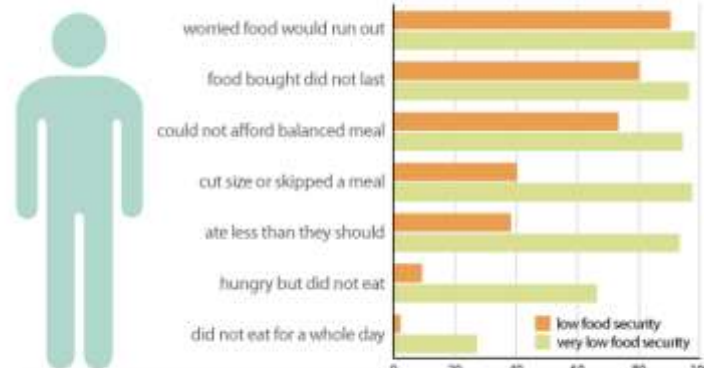
...that's **16.4%** of the population

food insecurity by state (% of households)



rates of food security over the past decade (% of households)

other facts and figures



low food security indicators (% of households with low food security)

Food desert

An urban area without access to food that is affordable, fresh, AND healthy





The best and worst large cities for food access.
Areas in green indicate where you can walk to a grocery store in 5 mins.

Discuss

As one of the most developed country in the world, why do we still have food insecurity?

What should we do to address this?

WHO should address this?

Energy Needs

The UN says we need 1,800 kcal a day

Most people in the world get this!!!! And more!!!

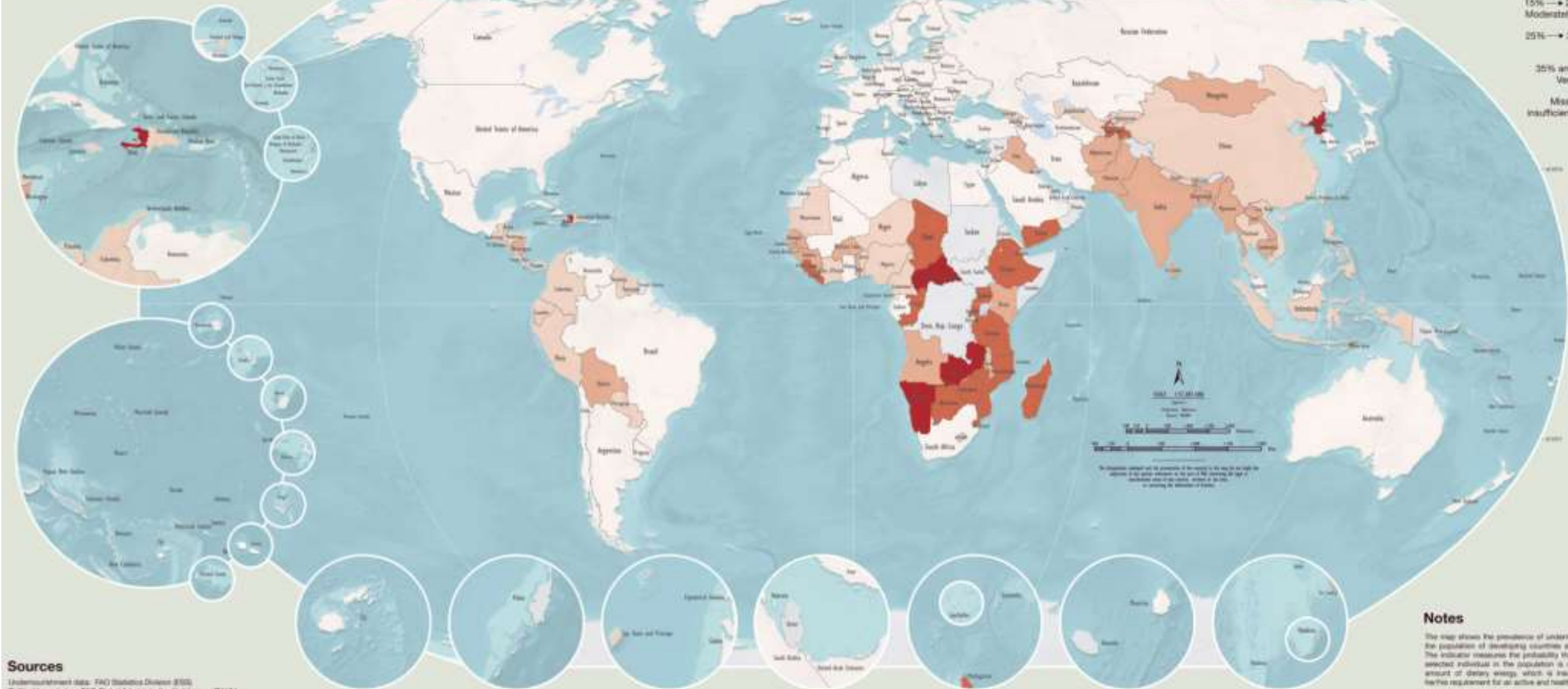
- 870 million are undernourished



Discuss

In which countries or regions will we find most of our undernourished populations?

Prevalence of undernourishment in the population (percent) in 2012-14



Sources
 Undernourishment data: FAO Statistics Division (ESS)
 Political boundaries: FAO Global Administrative Unit Layers (GUAL)
 Coastal relief: ETOPO1 National Geophysical Data Center (NGDC)
 Inland water bodies: FAO Land and Water Division (WLD)

Notes
 The map shows the prevalence of undernourishment in the population of developing countries as of 2012-14. The indicator measures the probability that a randomly selected individual in the population is consuming an amount of dietary energy which is insufficient cover her/his requirement for an active and healthy life.
 Data for South Sudan and Sudan for the years 2012-14 are not reliable and are not reported.

Agriculture Distribution - LDC



Geographic Connections

Name some countries that you think would have pastoral nomadism!

Agricultural Regions (Developing)

Pastoral Nomadism: subsistence agricultural based on herding

- dry lands of SW Asia, N. Africa, Central Asia, E. Asia
- **Animal Husbandry:** raising of domesticated animals, such as cattle, horses, sheep, and goats

Pastoral Nomadism

Animals

- Type and number depends on local cultural and physical characteristics
- Camel, sheep, goats, horse
- Milk, leather, trading animal products



Pastoralism

Movement

- Strong sense of territory
- **Transhumance:** seasonal migration of livestock between mountains and pastures



Discuss

What sort of problems do you think pastoral nomads might face?

The Future of Pastoral Nomadism

declining because of modern technology

Government forcing nomads to settle b/c they want to use the pastures for other stuff

Loss of folk culture



Geographic Connections

Think about the map you analyzed yesterday.

Name some countries that you think would have shifting cultivation!

Shifting Cultivation

Shifting Cultivation: farmers clear land, use it, and when soil is depleted, move on

- Tropical Latin America, Sub-Saharan Africa, SE Asia
- **Slash and Burn Agriculture:** slash vegetation and burn the debris
- **Swidden:** land cleared by slash and burn

Video: Slash and Burn

<https://www.youtube.com/watch?v=zDOq7QZXTdI>



We plant and harvest manioc, then we let the vegetation there grow again.







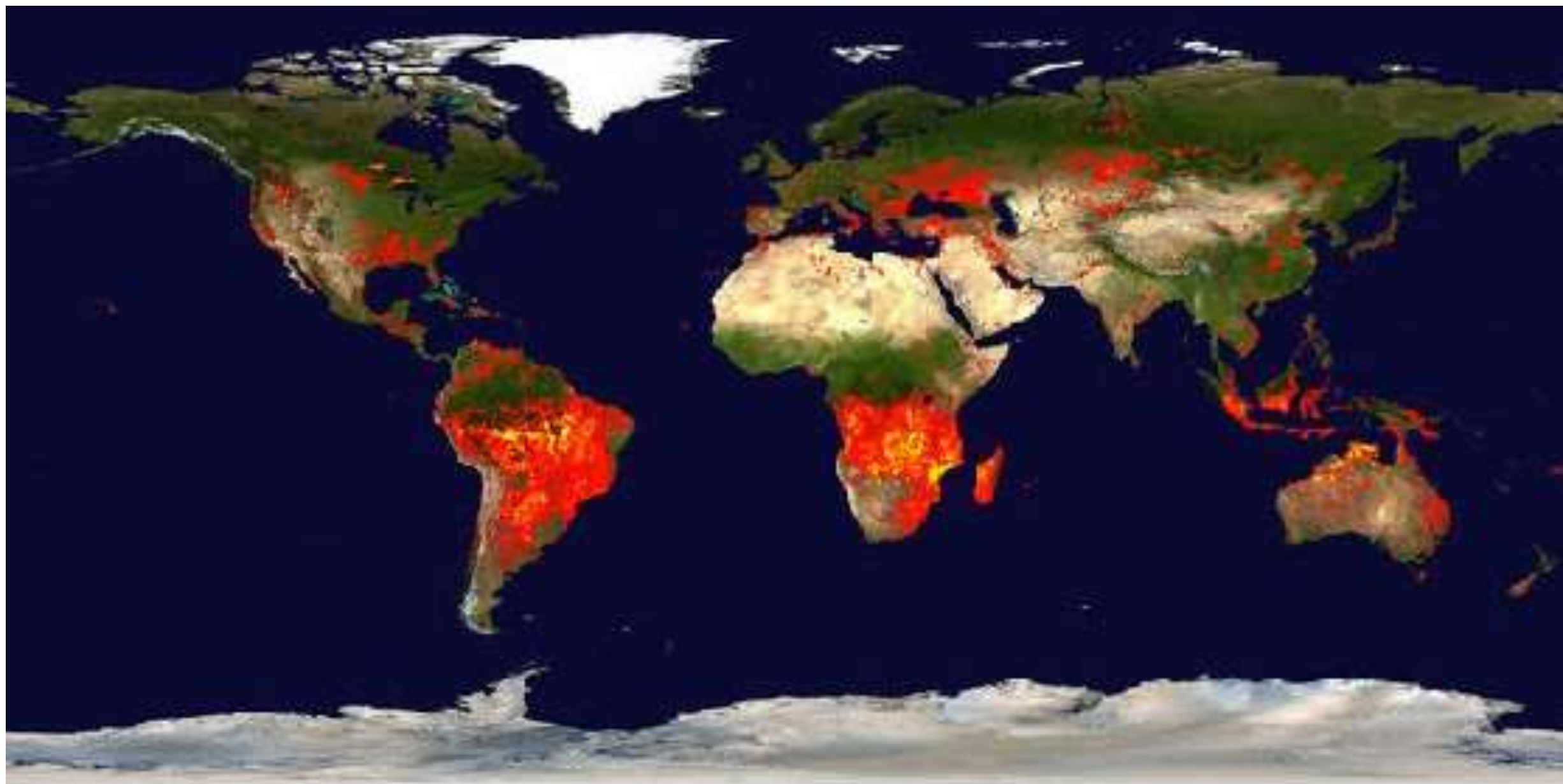


Once this was all forest ·









Discuss

What are some ways governments and international NGO's can work together to reduce slash and burn agriculture?

Geographic Connections

Name some countries that you think would have intensive subsistence agriculture!

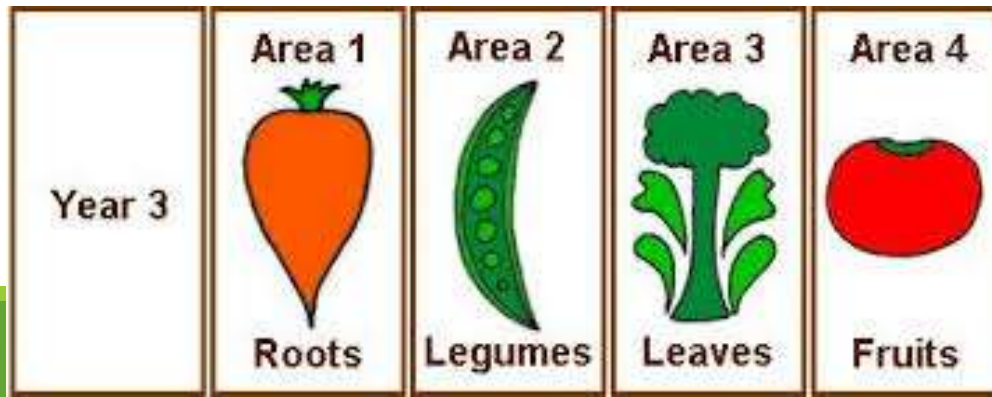
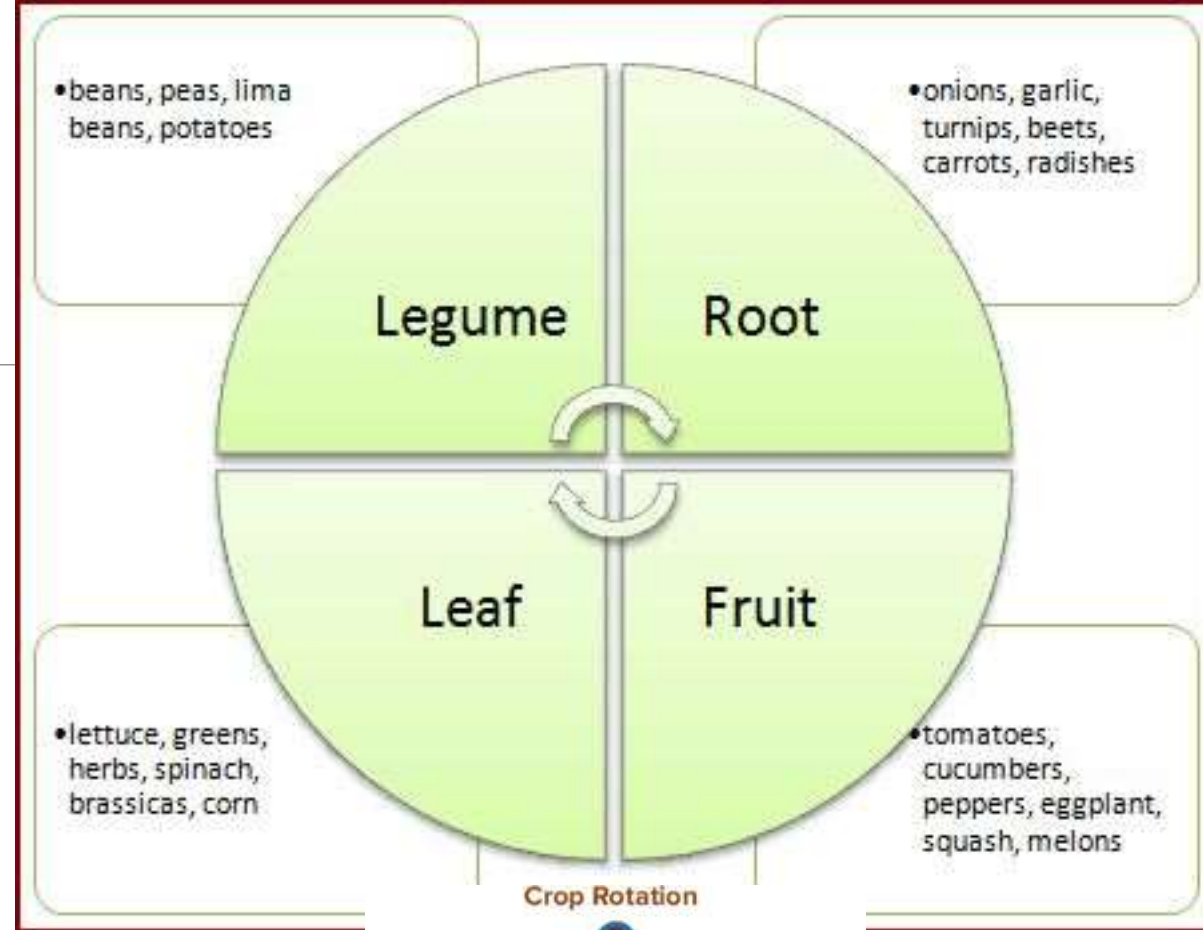
Intensive Subsistence Agriculture:

Intensive Subsistence Agriculture: farmers have to work part of the land **INTENSIVELY** to get anything

- large population concentrations in E. Asia and S. Asia
- Wet rice: plant rice on dry land, move to flooded areas as seedling



Crop rotation: grow different crops in different fields from year to year to protect the soil



Geographic Connections

Name some countries that you think would have plantations!

Plantation:

Plantation: commercial farm focused on 1 or 2 crops

- tropical and sub-tropical regions of Latin America, sub-Saharan Africa, S. Asia, SE Asia
- **Luxury Crops:** High-priced, relatively rare crops which are inessential to human survival.
- cotton, sugarcane, coffee, rubber, tobacco, cocoa, tea

www.agricultureguide.org



GROWING TEA



Summary:

Choose an LDC and identify a type of agriculture within it.

Explain how the geography of the country influences the agriculture.

Describe how the agriculture influences the ways its citizens live.

What People Eat

<http://time.com/8515/what-the-world-eats-hungry-planet/>

New Day

Bellwork

What are the four types of agriculture in developing countries?

Agenda:

Notes: Agricultural Distribution: MDC

Objective:

You will be able to summarize the agriculture of developed countries.

TUBI:

2 Billion pigs in the world



Agriculture Distribution (2)



Agricultural Regions (Developed)

Agribusiness: system of commercial farming in developed countries

- Declining revenue/rising costs
- Lots of machines and migrant workers



What is this cartoon saying about agribusiness?



Agribusiness:

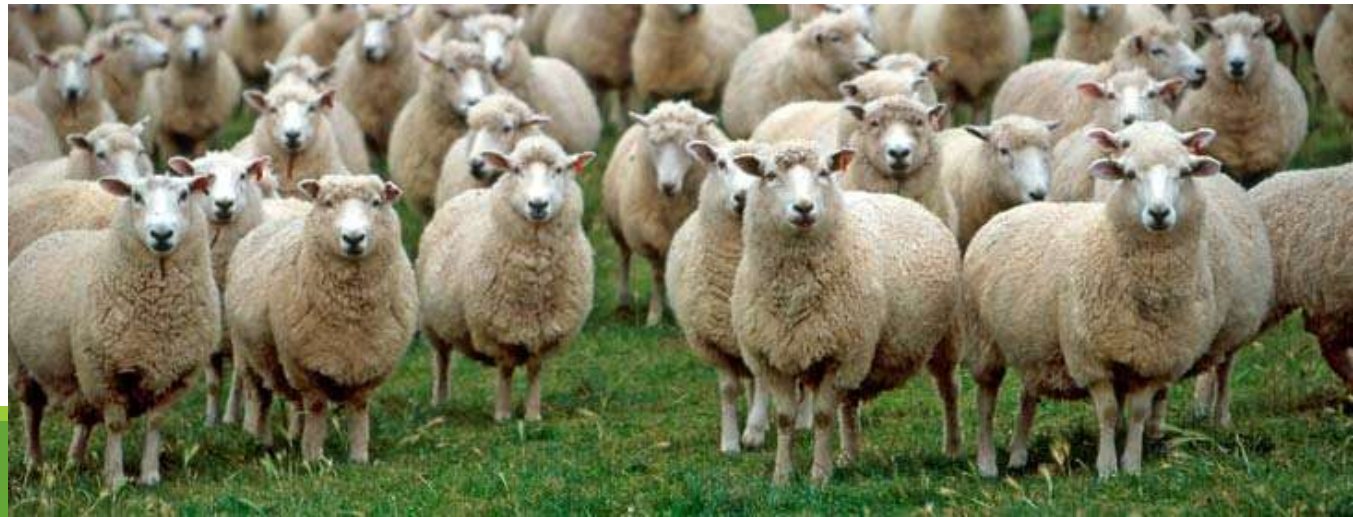
- **Cash crop:** crops grown for money (usually associated with tropical fruit)
- **Specialty crop:** crops which are produced, usually in developing countries, for export.



Mixed crop and livestock:

Mixed crop and livestock: US, central Europe

- Integration of animals and crops (Crops grown to feed animals)



Commercial gardening

Commercial gardening: grow plants for people's gardens

- USA and Australia
- Very efficient, large scale operations
- Fruit and nursery plants



Dairying

Dairying: raising animals for dairy products like milk, butter, and cheese

- near population centers in US, Canada, Europe
- **Milkshed:** ring surrounding a city from which milk can be supplied before spoiling



Discuss

What are some challenges that dairy farmers might face?



Challenges

Labor intensive (constant attention)

Feeding cows during winter is super expensive



Grain

- **Grain:** growing of grain to be sold as food for animals and to be manufactured (flour)
- USA, Canada, E. Europe
- World's leading export crop





Mediterranean Agriculture

Mediterranean Agriculture: commercial agriculture, mostly horticulture and luxury crops

- Around the Mediterranean Sea, US , South Africa, Chile
- VERY PRODUCTIVE
- Sea winds brings moisture, mild winters , hot summers

Mediterranean Agriculture

- Crops: olives, grapes, figs, citrus
- Problems: droughts!



-
- **Horticulture:** the art or practice of garden cultivation and management.



Ranching:

Ranching: commercial grazing of livestock over an extensive area

- N. America, SE Latin America, Central Asia, Sub-Saharan Africa, S. Pacific
- Over land too dry to cultivate
- First: Open ranges, then: Semi-nomadic, Finally: Ranches



Video: Your Life – Your Agriculture



Summary:

Choose an MDC and identify a type of agriculture within it.

Explain how the geography of the country influences the agriculture.

Describe how the agriculture influences the ways its citizens live.

Video: John Oliver – Tobacco

<https://www.youtube.com/watch?v=6UsHHOCH4q8>



New Day

Bellwork

What is a crop or type of agriculture we do here in AZ?

What challenges might they face?

Agenda:

Notes: Challenges to Agriculture

Objective:

You will be able to summarize the challenges in agriculture today.

TUBI

Cows can walk up a flight of stairs, but once there, they can't walk back down. Their knees just don't bend the right way.



Challenges to Agriculture



Developing Countries

The Challenges:

- Farmers have to feed a growing population
- Farmers pressured to grow crops to export instead of eat

Growing Population

Boserup Thesis: Population increases requires more labor and technology , forcing the switch to intensive agriculture

- New farming methods
- Less time to **fallow**: land that is left unsown for a time to restore its fertility as part of a crop rotation

Types of Fallow



- Forest Fallow – used 2 yrs, ignored 20
- Bush Fallow – used 8 yrs, ignored 10
- Short Fallow – used 2 yrs, ignored 2
- Annual Cropping – Every year (crop rotation)
- Multi-cropping – fields used multiple times a year

International Trade

To increase production, subsistence farmers need to import technology/chemicals

To import that they need money

To get money they grow crops to export

Discuss

When more land is used for growing export crops, then you have less to grow food.

But you can't grow enough food without the imported tech

What do you do?

Drug Crops

Most lucrative export crops are drugs

- Cocaine: Colombia, Peru, Bolivia
- Heroin: Afghanistan, Myanmar, Laos
- Marijuana: Mexico





Discuss

How do we discourage the production of drugs if it is the only source of income in a developing country?

Developed Countries

Overproduction of food

- Because commercial farms can supply so much food, demand is low and prices are low

Von Thünen Model

AKA: Theory of Rural Land Use

Farmers have to consider:

- cost of land
- cost of transportation
- Farmers closer to markets choose crops that cost more to transport

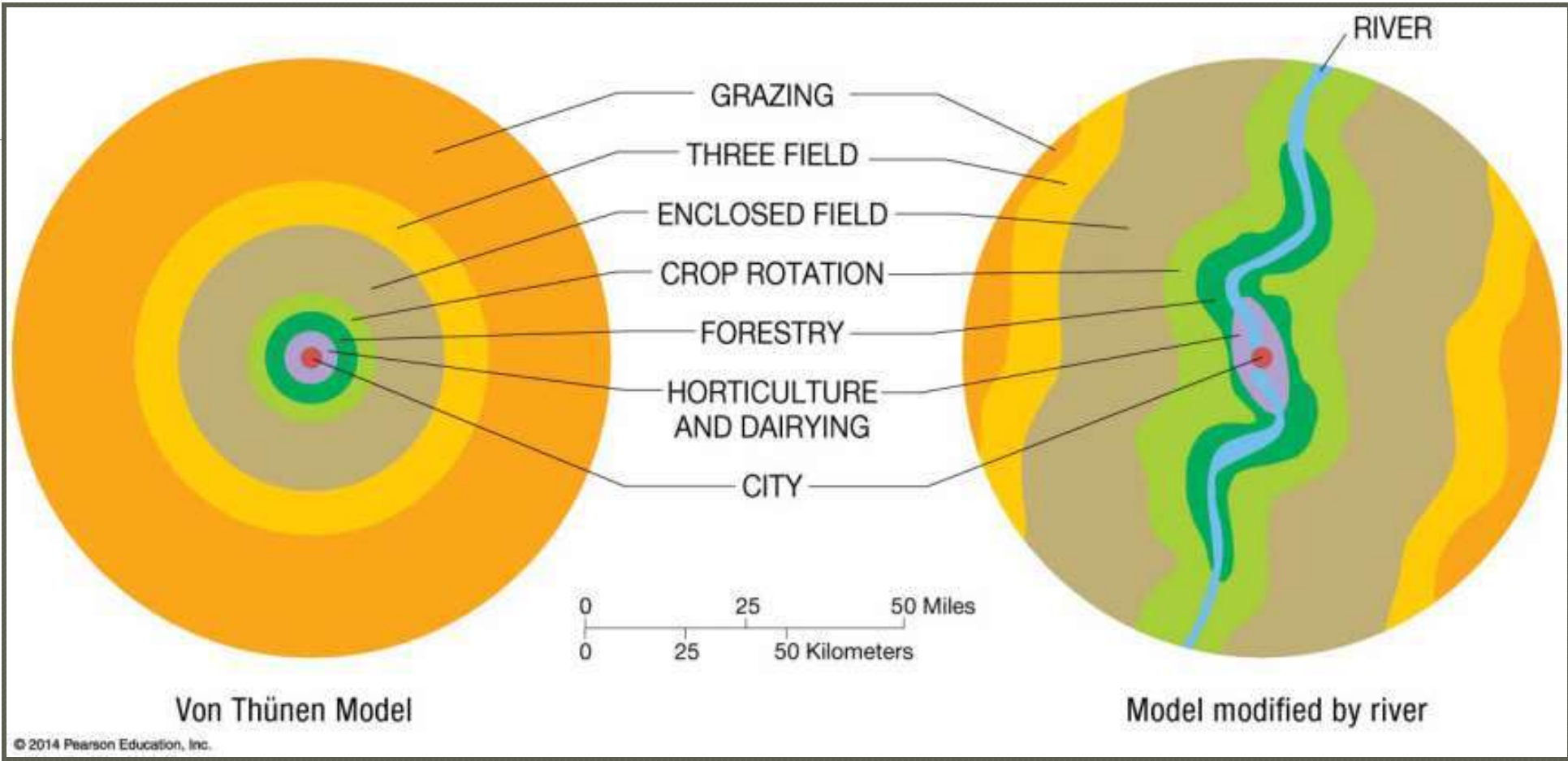
4 Rings Surround a City

1st ring: Perishable products like dairy and horticulture

2nd ring: Forestry for wood, because of its weight

3rd ring: Various crops (cereal grains)

4th ring: Extensive animal grazing



Discuss

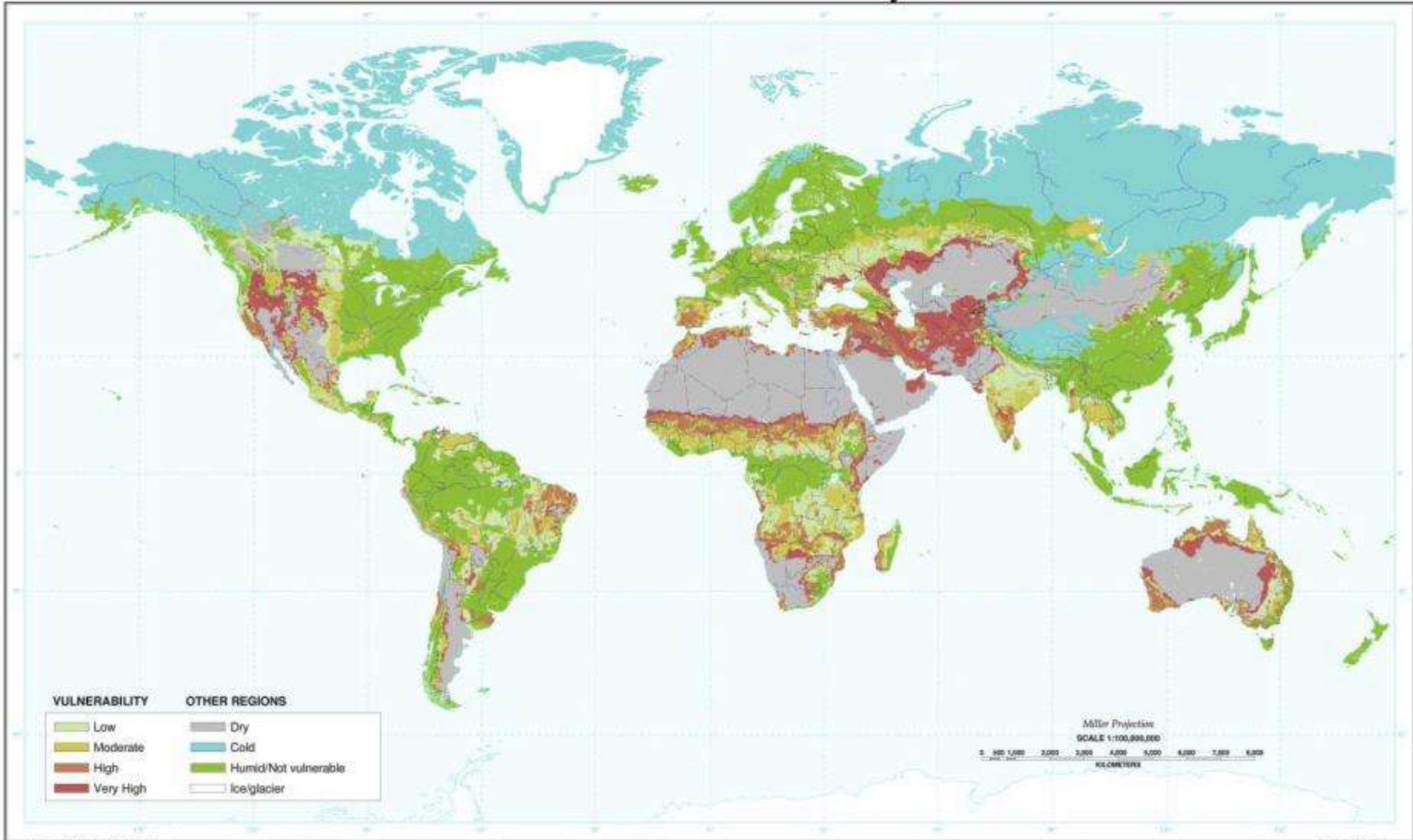
Other than geography, what could change the shape of the rings in the Von Thünen model?

Environmental Challenges

Desertification: formally productive land becomes arid, unproductive, and barren



Desertification Vulnerability



Erosion

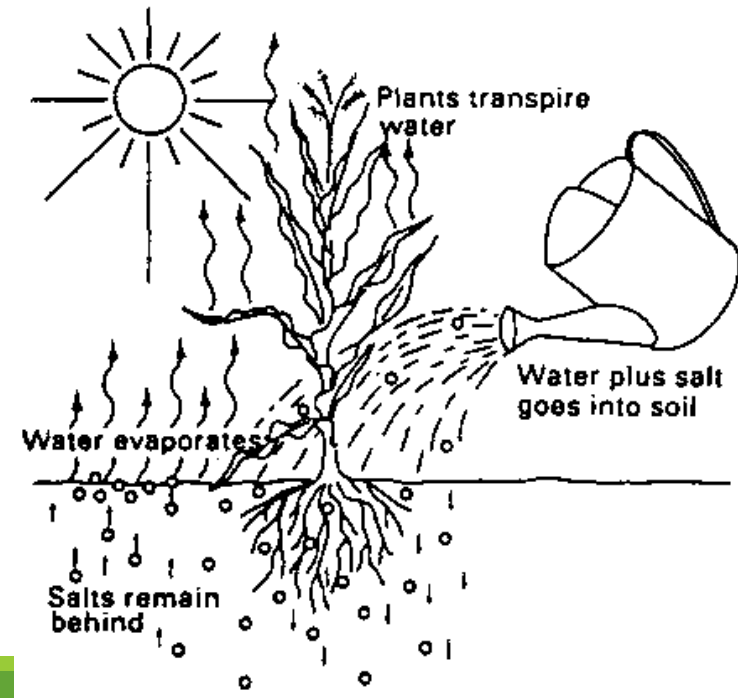
Erosion: The loss of the fertile top layer of soil

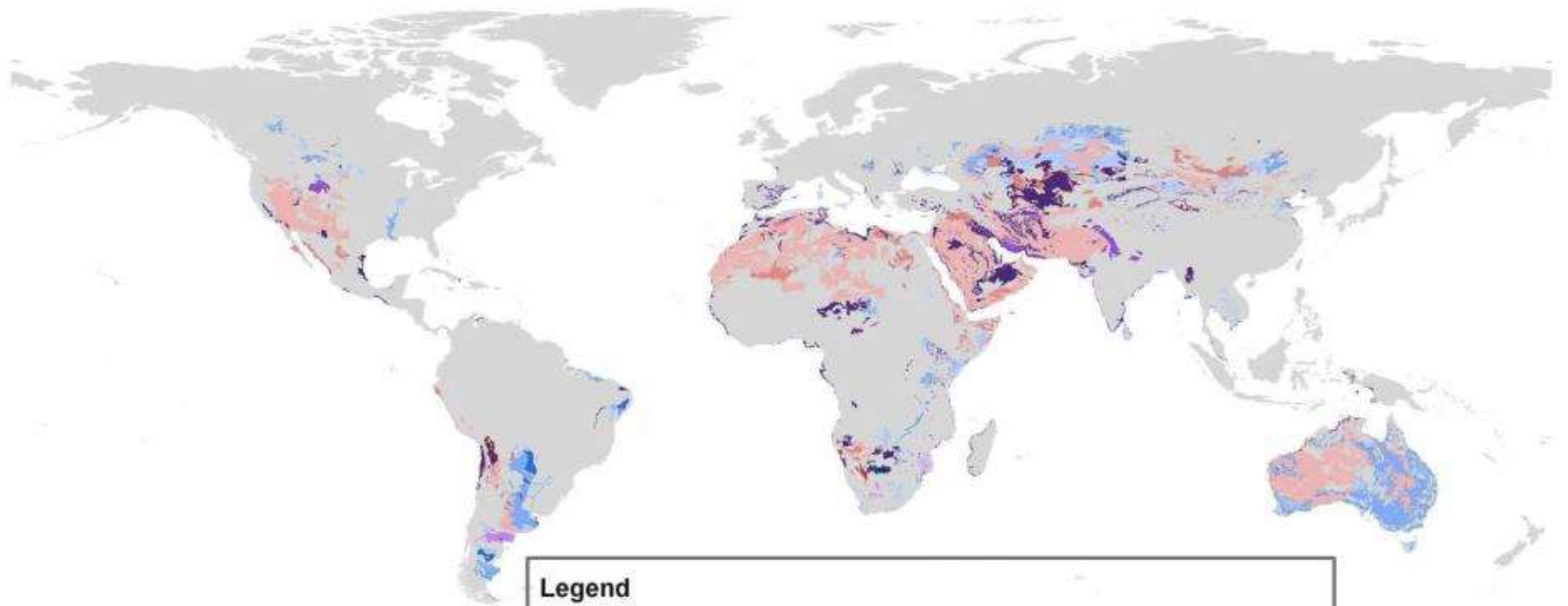
- Major problem in areas with fragile soils, steep slope, or heavy seasonal rain
- Plants prevent erosion by holding soil with their roots



Salinization: Buildup of salts in soil

- occurs when arid soils are irrigated





Legend

Type and severity levels of salt-affected soils

 saline slight	 sodic slight	 saline-sodic slight
 saline moderate	 sodic moderate	 saline-sodic moderate
 saline high	 sodic high	 saline-sodic high
 saline extreme	 sodic extreme	 saline-sodic extreme

Summary:

Identify two world regions and explain agricultural challenges they face.

Define the Von Thunen model.

Video: Ted Talk

https://www.ted.com/talks/jill_farrant_how_we_can_make_crops_survive_without_water



New Day

Bellwork

If you live in Vietnam, what kind of agriculture will you be doing?

What challenges will you have?

Agenda:

Notes: Feeding the World

Objective:

You will be able to summarize the different ways to feed the world.

TUBI:

One Puffer Fish contains enough poison to kill 30 people.



Feeding the World



Export More Food!

Major importers: Russia, Germany, UK, Africa, SW Asia, E. Asia, Central Asia

Major Exporters: USA, Canada, South America, Australia, India, Indonesia

More Agricultural Land

Just turn more land
into farms

Problems:
Urbanization,
Desertification,
salinization



More Fish!!

Capture wild fish

Aquaculture: cultivation of seafood in controlled conditions

We eat a LOT of fish, but we have dangerously overfished the seas



Grow More Food

Second Agricultural Revolution: agriculture expands because of the Industrial Revolution

Green Revolution: invention/diffusion of higher yield seeds and use of fertilizers



Grow More Food

Biotechnology: genetically engineered crops in agriculture & DNA manipulation in livestock in order to increase production.



Growing More Food

Genetically Modified Organisms (GMO):
alter foods to have favorable traits

- **Domestication:** To adapt or tame so as to be cultivated by and beneficial to human



Anti - GMO

Health concerns: eating too many GMO's reduce the effectiveness of antibiotics

Export problems: MDC's don't like them, so there's no market

Dependence on Corporations: don't want to have to buy the same seeds from USA forever

Discuss

What do you think of genetically modified foods? A way to feed or doom the future generations?

Summary

Explain the main source of food for two major world regions.

Describe challenges to those feeding those regions.

New Day

Bellwork

What are some of the ways we increase food production?

Agenda:

Quiz

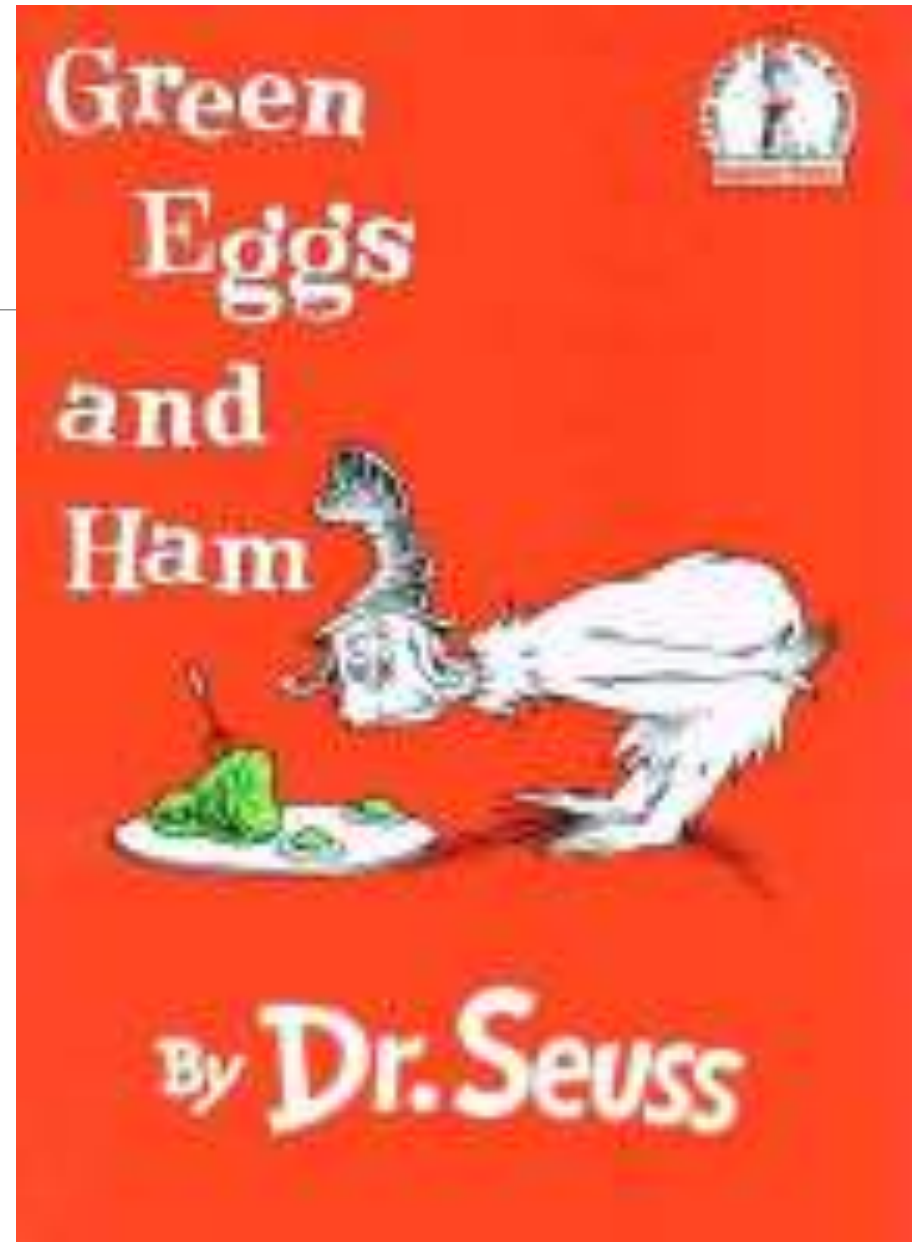
Practice FRQ

Agenda:

You will be able to identify and explain the decline in dairy farms.

TUBI

Someone bet Dr. Seuss he couldn't write a book with only 50 words. So he wrote Green Eggs and Ham.



Quiz

Write clearly!

Done? No Tech, no Naps

- Do Something!

Practice FRQ

Write MORE!

You can't get the points if you don't put words on paper.

Use MULTIPLE examples

More of your time should be spent writing than planning

You should use every minute available

Practice FRQ

45 minutes

Plan and Write

You can work with those around you and use your notes

Done? Staple prompt to back and turn in

Score

Return to owner

Owner, score your own

Write 2 suggestions of what you can do better

New Day

Bellwork

What are things you can do that will help the environment?

Agenda:

Notes: Sustainable Agriculture and Agribusiness

Objective:

You will be able to address the paradox of agribusiness and sustainability in writing.

TUBI

When Woodrow Wilson was President, the First Lady had sheep graze on the White House lawn to keep it neat and well trimmed.



Sustainable Agriculture and Agribusiness



Sustainable Agriculture:

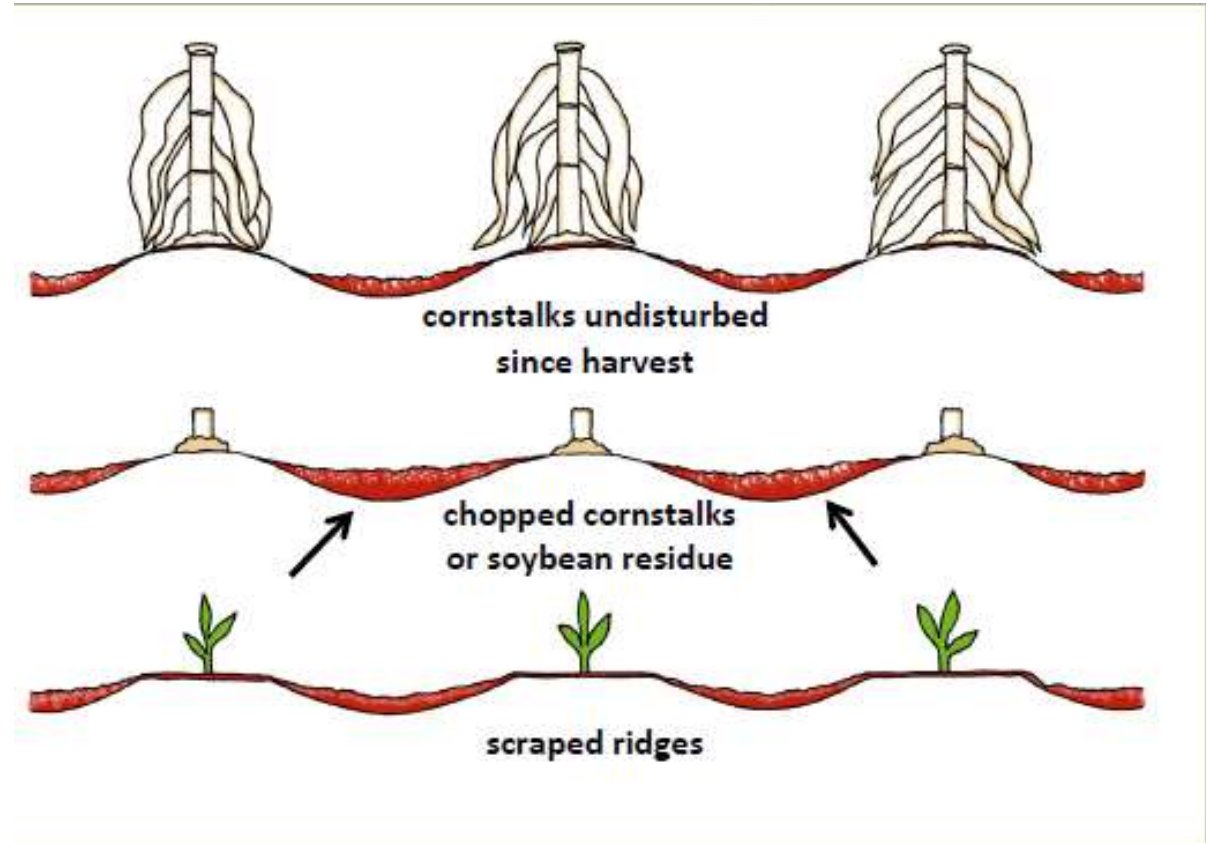
Sustainable Agriculture: practices that preserve and enhance the environment



Sensitive Land Management

Ridge Tillage: plant crops on ridge tops.

- Lowers the cost of production
- less soil erosion



Sensitive Land Management

Less **irrigation**: the watering of land to make it ready for agriculture.

Less **double cropping**: harvesting twice a year from the same field.



Limited Chemicals

Best way to prevent weeds and insects: a little chemicals, mechanical weeding, ridge tillage

Organic Agriculture: relies on local ecological processes, no pesticides



Limited Chemicals

Pesticides: a substance used for destroying insects or other organisms harmful to crops



Integrated Crop and Livestock

Grow food to feed your animals!!

Let your animals wander around the farm!



Discuss

Obviously, sustainable agriculture is the best option.

What are some ways governments can encourage/ pressure transnational corporations to use it?

Agribusiness

CAFO

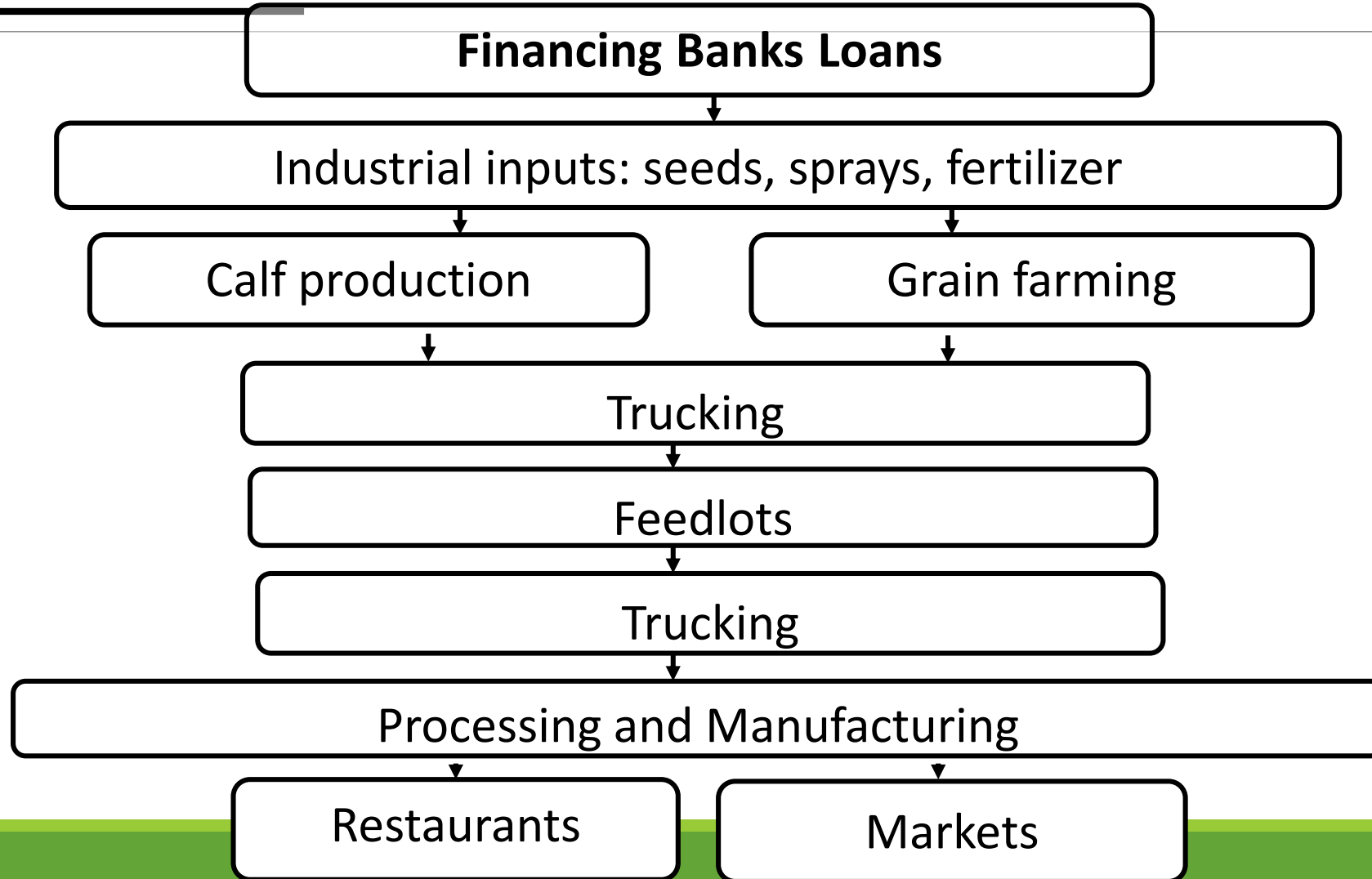
- CAFO = Concentrated Animal Feeding Operation
- **Feedlots:** area where livestock is fed and fattened up



Agribusiness

Vertical Integration: when several steps in production and distribution of a product is controlled by a single company to set up a monopoly

Vertical Integration in Grain-based Beef Production



Discuss

Which parts are what we typically think of as “farming”?

Why intensive commercial agriculture?

More efficient production of food

Rising population/wealth created need

Rural -> urban migration

Corporations make more money

4. So what?

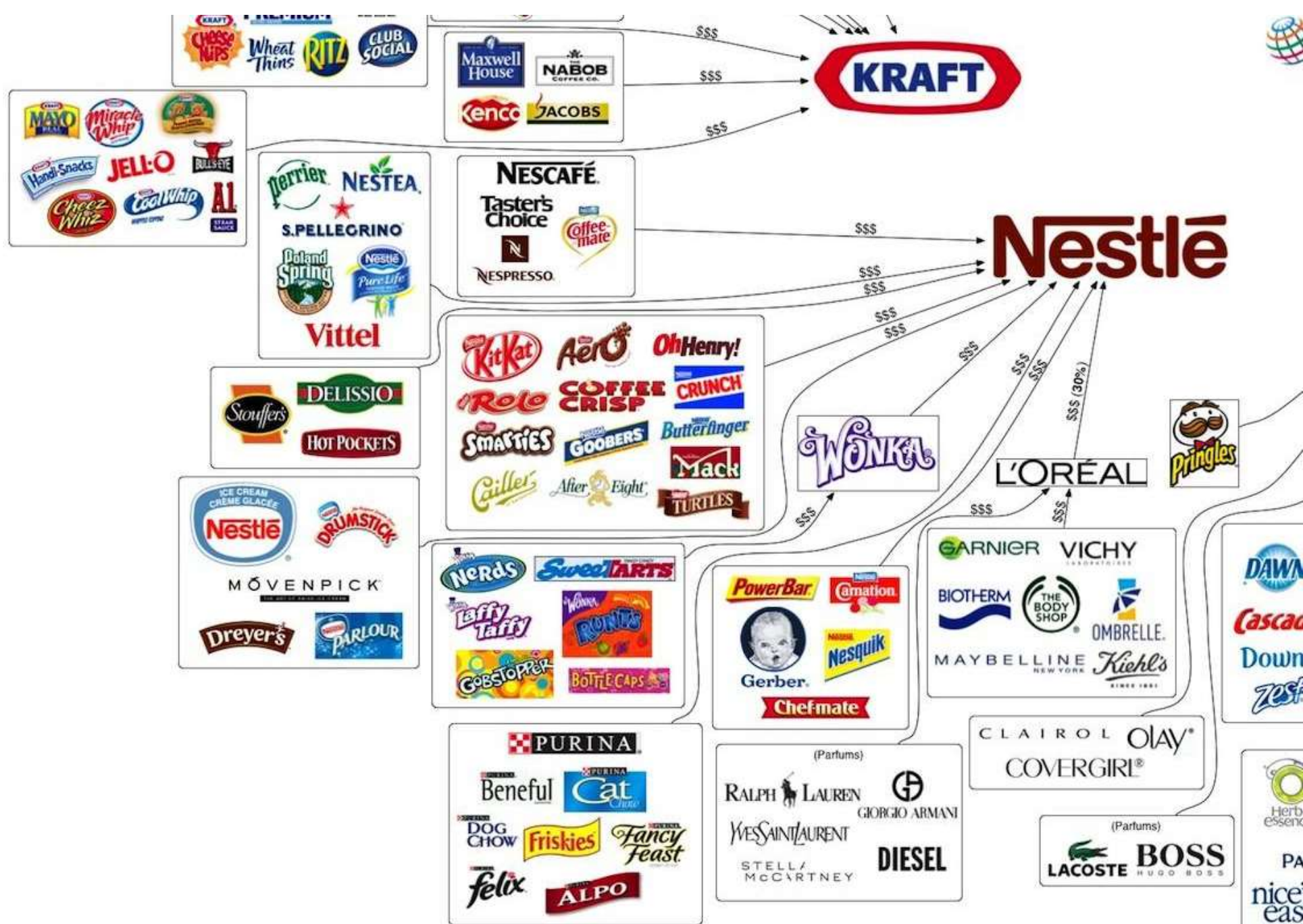
Disappearance of family farms

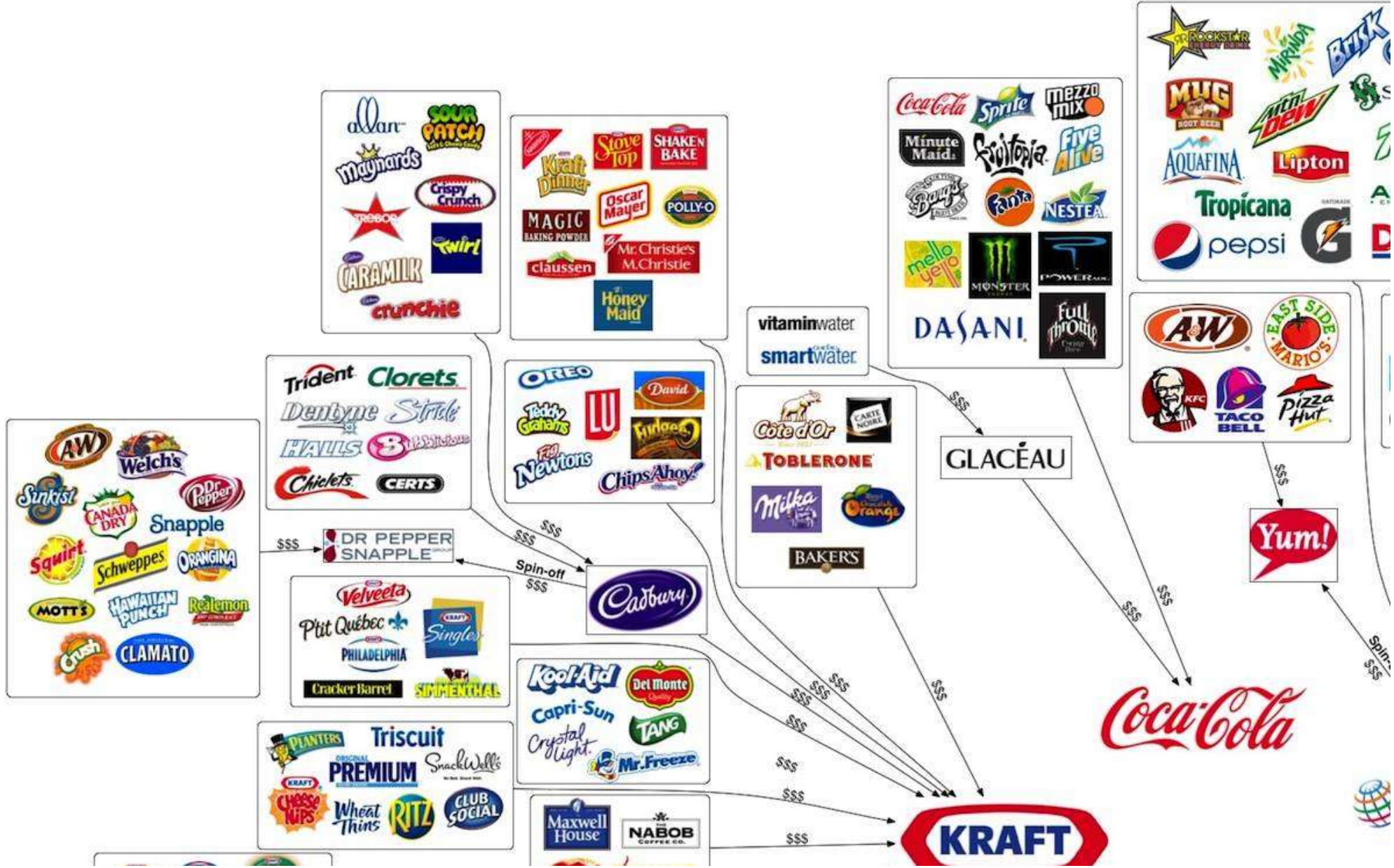
Money invested in research (GMO)

Corporate control of agriculture: Monsanto

- Protected under law and get subsidies
- **Subsidy**: money from the gov to a company or industry
- No oversight, HUGE monopoly









WRIGLEY

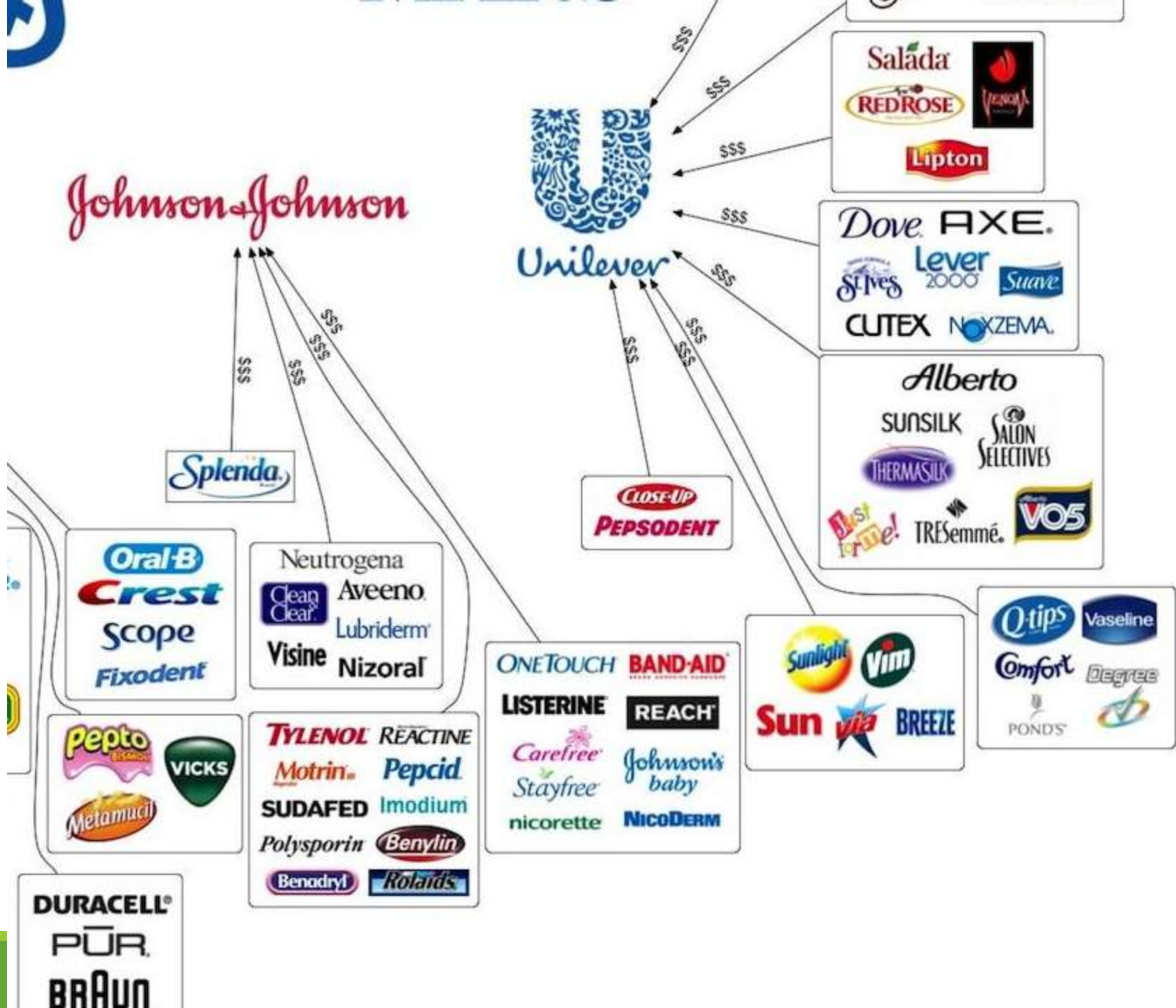


MARS



PEPSICO







Backlash

Cooperatives

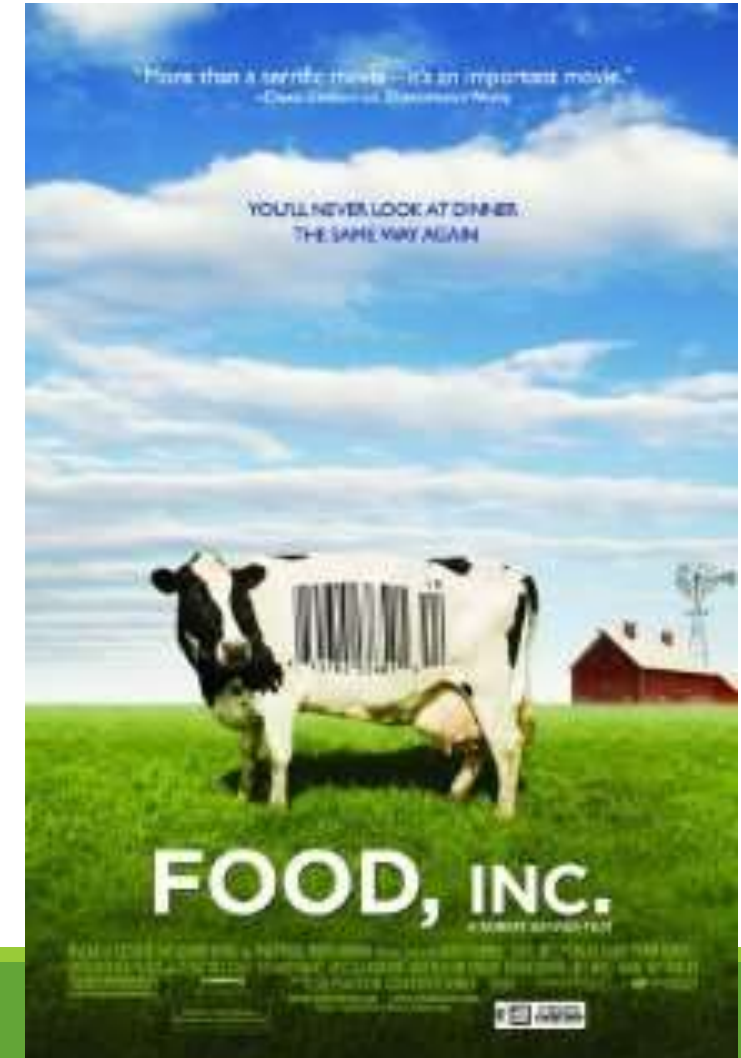
Farmers Markets!
(more popular)

Local foods movement

“Fair Trade” movement



Videos: The Meatrix, Hog Production, Secrets to Food Marketing, Back to the Start, Food Inc.



Discuss

What are your reactions to those videos?

How did they manipulate you?

Which ones were most effective? Why?

What do you think about agribusiness now?

Discuss

Like any industry agribusiness isn't perfect. However, the use of CAFO's and GMO's feed millions of people every day.

As we look towards the future, what should we do?

Summary:

Define sustainable agriculture and explain two of its practices.

Describe challenges to sustainable agriculture. Use specific geographic and agricultural examples.

New Day

Bellwork

If you lived in Nigeria, what kind of agriculture would you be doing?

What would be some challenges

Agenda:

4 Level Map Analysis

Objective:

You will be able to write multiple choice questions with a partner about agriculture.


TUBI

President John Quincy Adams had a pet alligator.




4 Level Map Analysis

BULLET
POINTS

- 
- 1. What do you see?**
 - Do you comprehend the map?
 - 2. Where do you see things?**
 - (patterns, unique things)

COMPLETE
SENTENCES

- 
- 3. Why there?**
 - 4. So what?**
 - Connect this to what we know about geography. Summarize what the map is saying. Why is this map important?

Lots of Ted Talks on Agriculture

<https://www.ted.com/topics/agriculture>