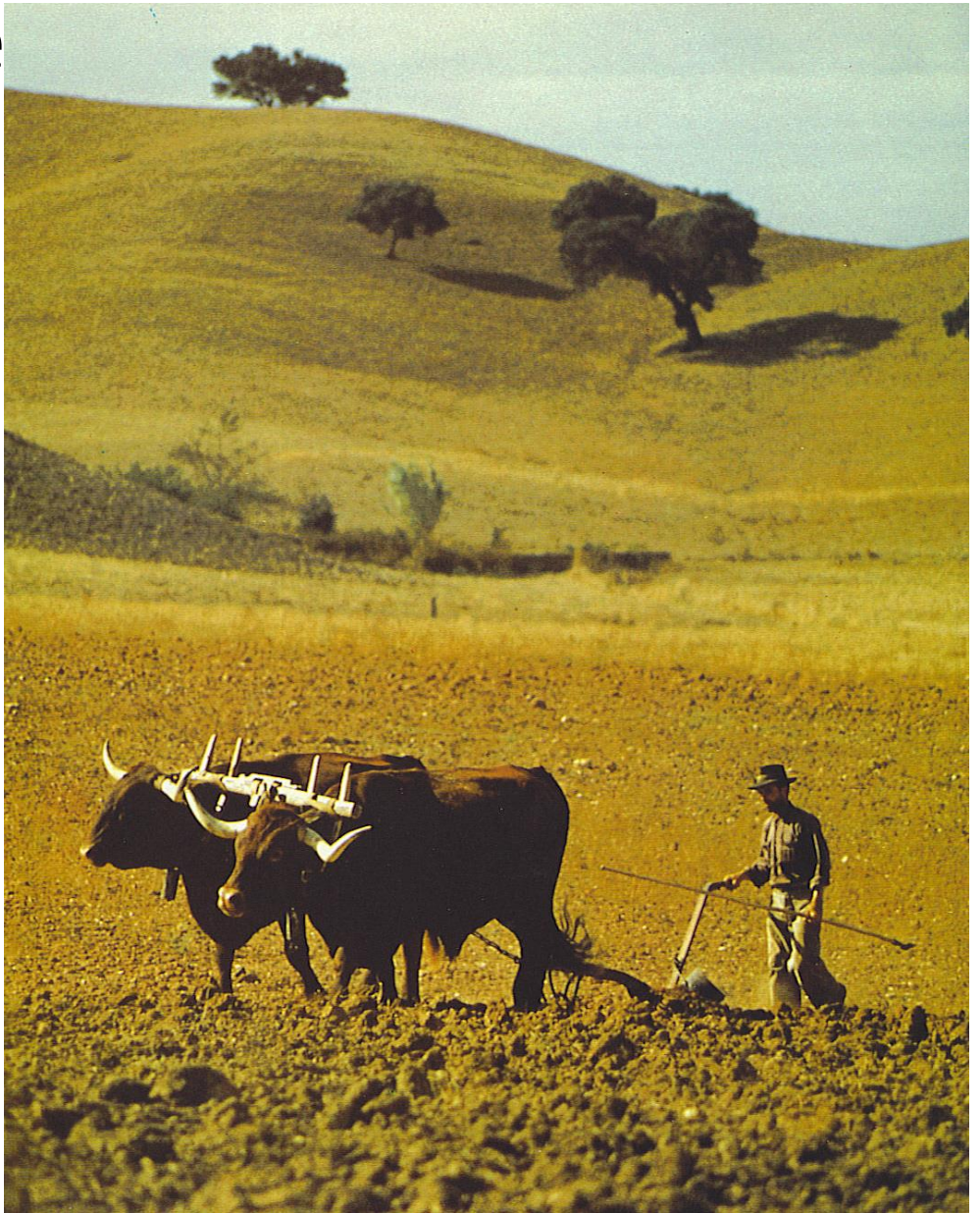
Agriculture

Chapter 11

Classification of Economic Activities

- **Primary** or **Extractive** Activities Hunting & Gathering
  - Farming
  - Livestock raising or herding
  - Lumbering
  - Mining
  - Quarrying
- Working in the natural environment-often the environment suffers.



Primary or **Extractive Economy-** Teak logs near Mandalay, Myanmar

SNAPPER • GINOWAN CITY, OKINAWA

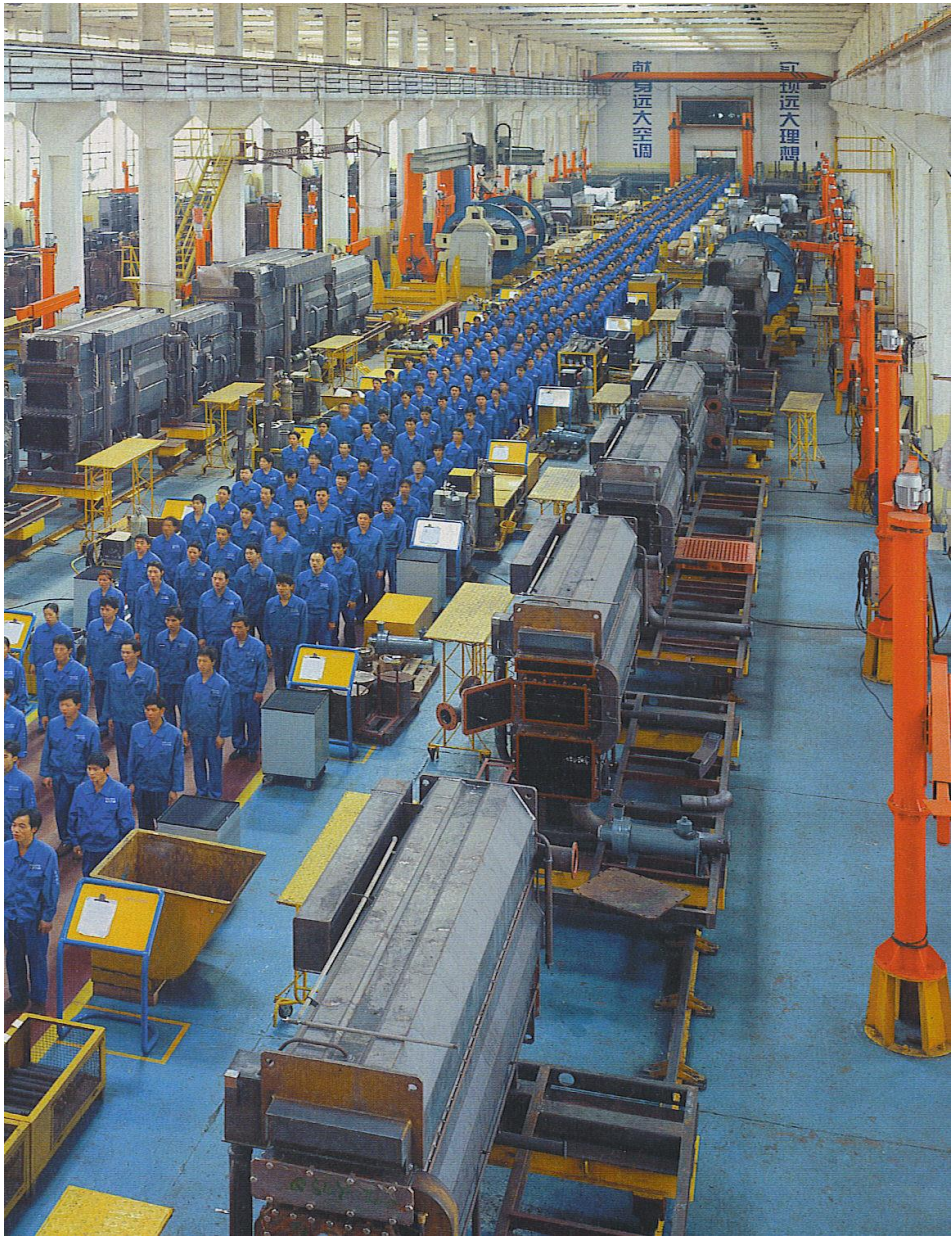

HAMSI • ISTANBUL, TURKEY

Top picture-aquaculture or fish farming in Thailand

Right-fishing, one of the most dangerous occupations in the world, is vital to many countries (Iceland, Japan, etc.), but fish stocks are running low due to over fishing in many parts of the world

Classification of Economic Activities

- **Secondary** Activities
  - The stages are; Stone Age-Copper Age-Bronze Age-Iron Age, etc.
  - Manufacturing-converting raw materials into finished goods.
  - Major changes in human history marked by new ways to convert raw materials into finished good.



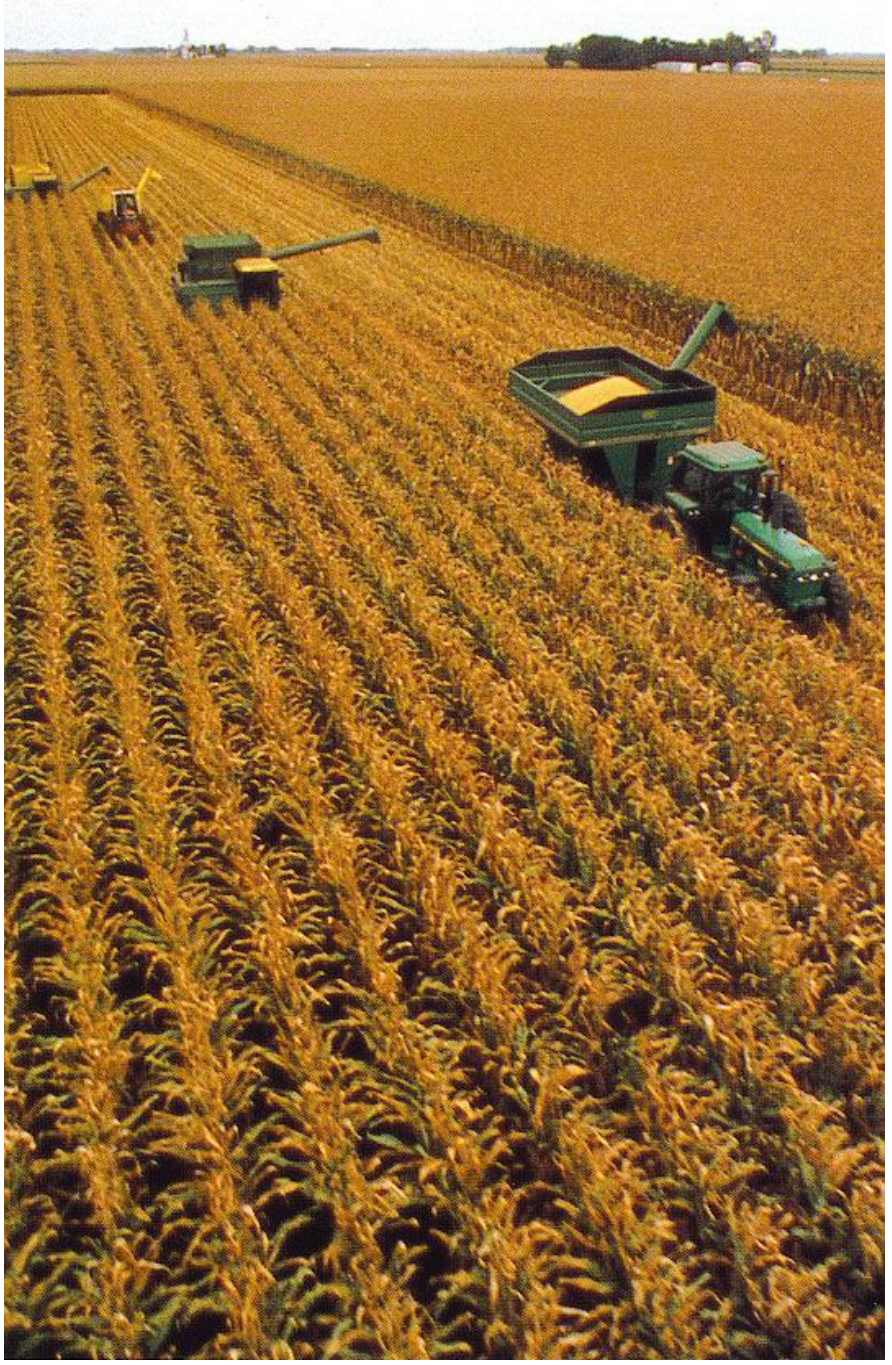
Classification of Economic Activities

- **Tertiary** Activities provide essential services in a complex society
  - Doctors, dentist, hospitals
  - Lawyers
  - Teachers
  - Stores, shops
  - Banks, offices
- **Quaternary and Quinary** are high tech and specialization
  - Administration
  - Research

Agriculture

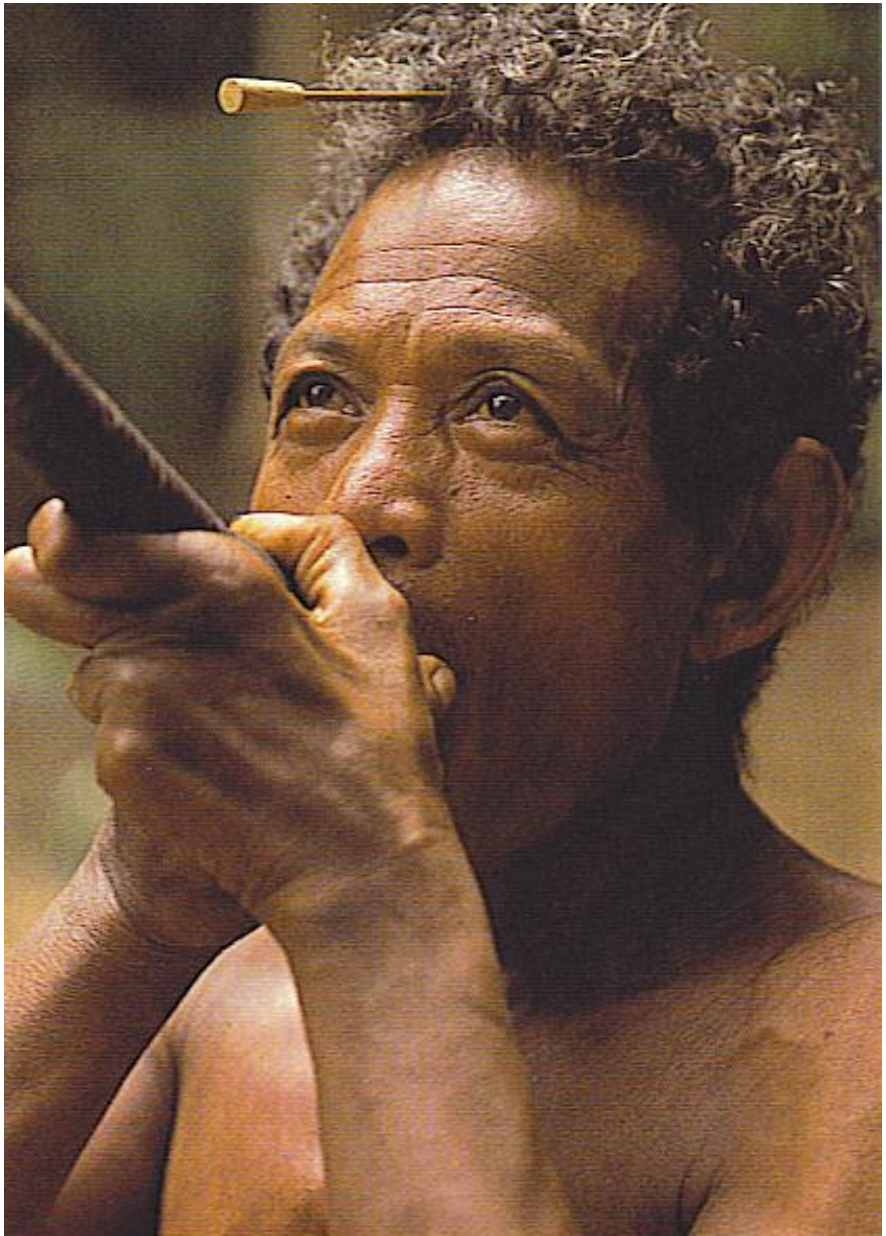
Agriculture – the purposeful tending of crops and raising of livestock in order to produce food and fiber.

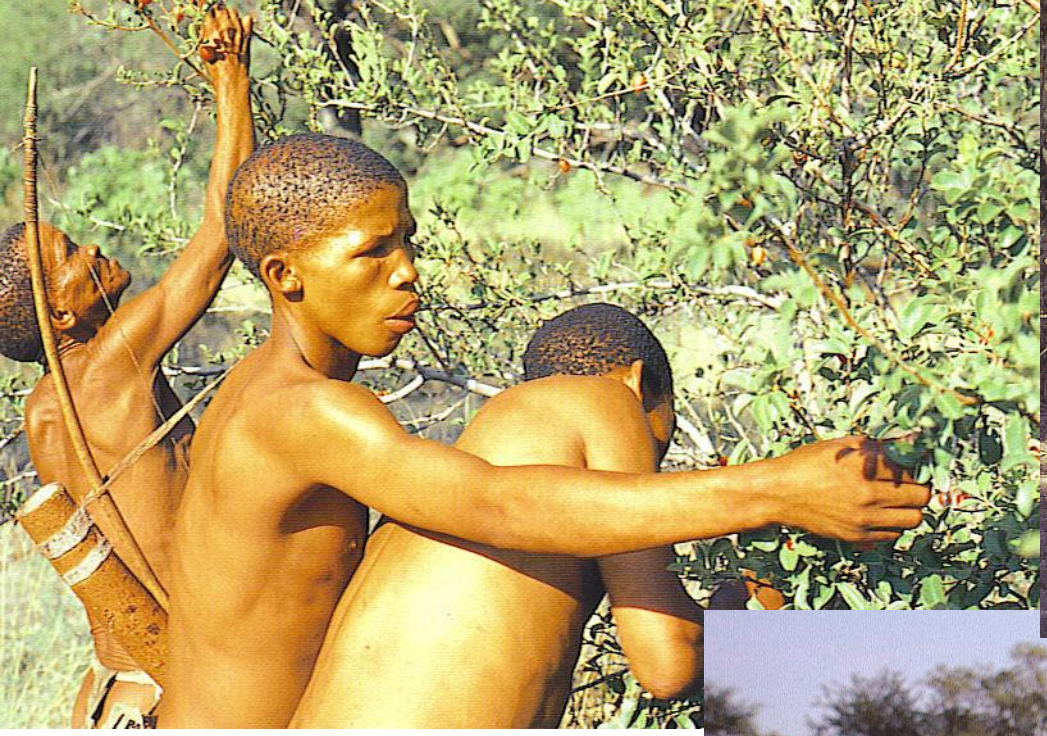
- **The Persistence of Agriculture**
- The US only has 2 million farmers.
- Mechanization and farm consolidation have forced out many small scale farmers.
- Yet US farm production is at an all time high.
- **IN MOST OF THE WORLD-AGRICULTURE REMAINS THE LEADING EMPLOYMENT SECTOR-40% of the world's population are farmers**



Before Farming

- Food production, preparation and consumption plays a major role in all culture.
- Food taboos by custom or religion, food intolerances- dairy, eggs or fish, peanuts, etc.
- Hunting & Gathering or Fishing was the only way to acquire food for most of our existence.
  - San of southern Africa
  - Aboriginals of Australia
  - Native Americans of Brazil

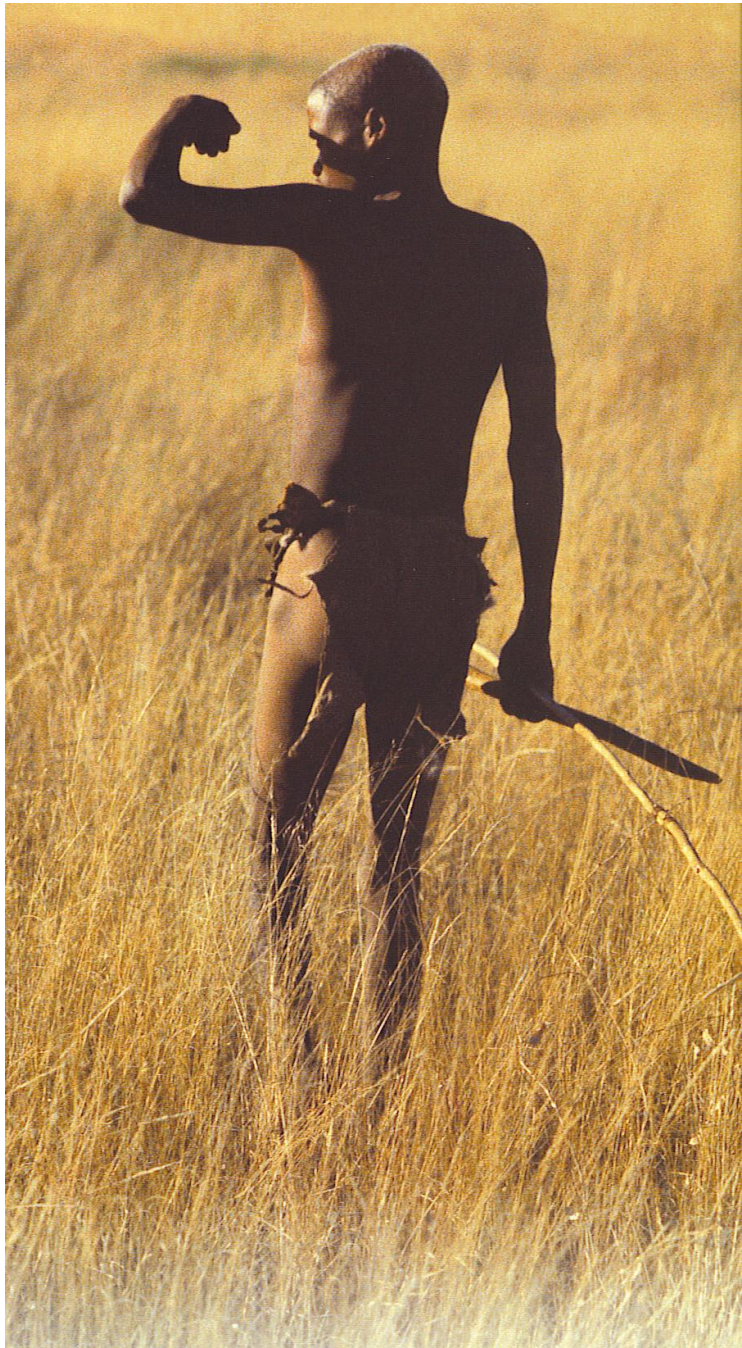




Bushmen of the Kalahari still live By hunting and gathering

Hunting & Gathering Societies

- Settlements are **NOT PERMANENT**
- Populations remain small
- Early hunter-gatherers lived in wetter & better environments and had an easier life than those of the modern day.
  - Eastern North America- forests, wildlife & nuts
  - Pacific Coast Americas- salmon fishing
  - Aleuts of tundra caribou herds
  - Interior North America-buffalo herds

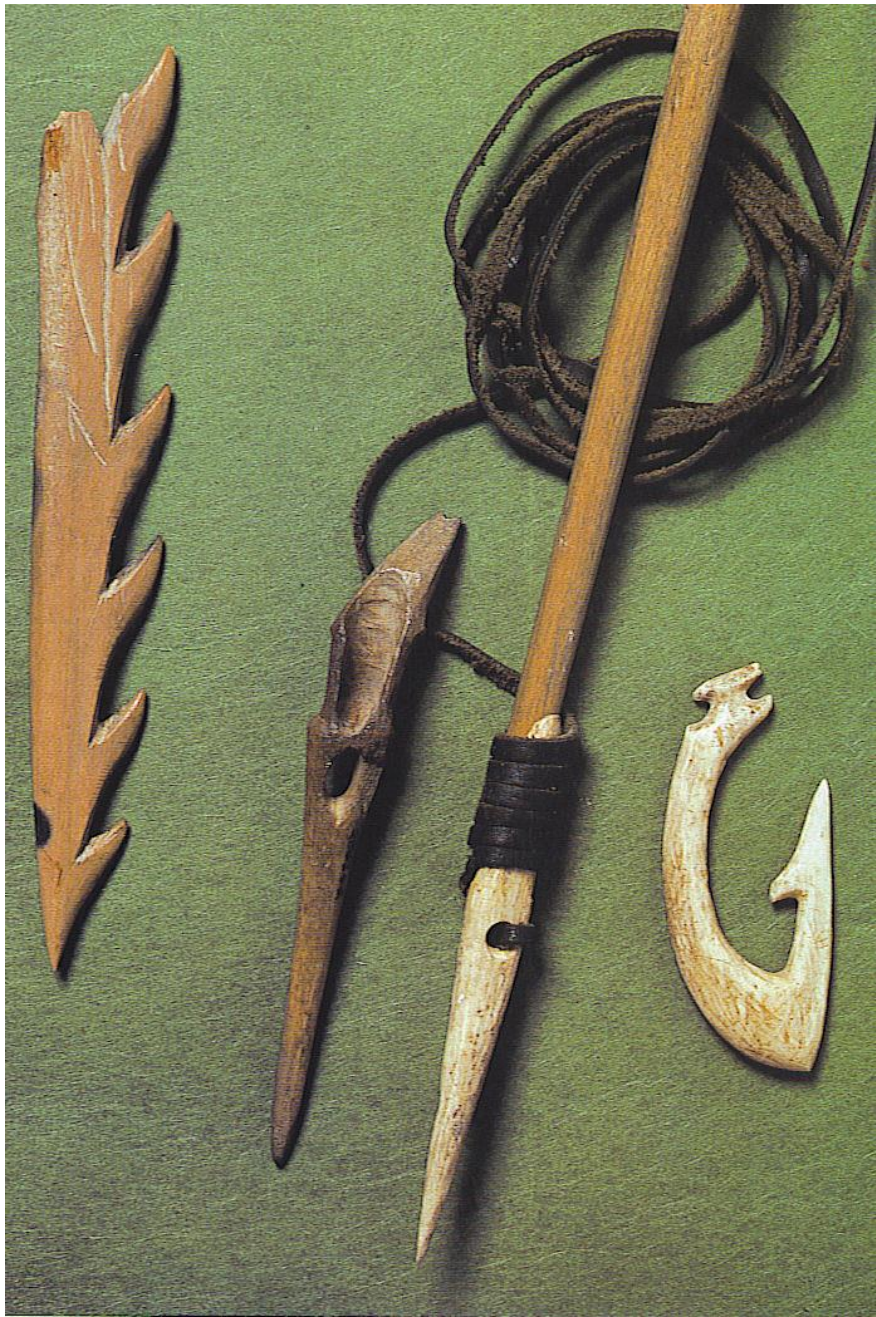


Hunting & Gathering Societies

- Technology improved slowly
- Bone & stone tools & weapons
- Learned to control fire-protection-cooking
- Metallurgy evolved with copper, bronze, gold and later iron for arrowheads, knives, axes and other utensils.
- Even pre-agricultural societies had complex tools, utensils & weapons

Hunting & Gathering Societies-Fishing

- 12,000-15,000 yrs. Ago coastal flats were flooded as glaciers melted
- Continental shelves became shallow seas where marine life was plentiful
- Coastal areas became warmer and more habitable
- Shell fish & trapped fish added to the diet as harpoons, spears, hooks, boats and baskets were created.



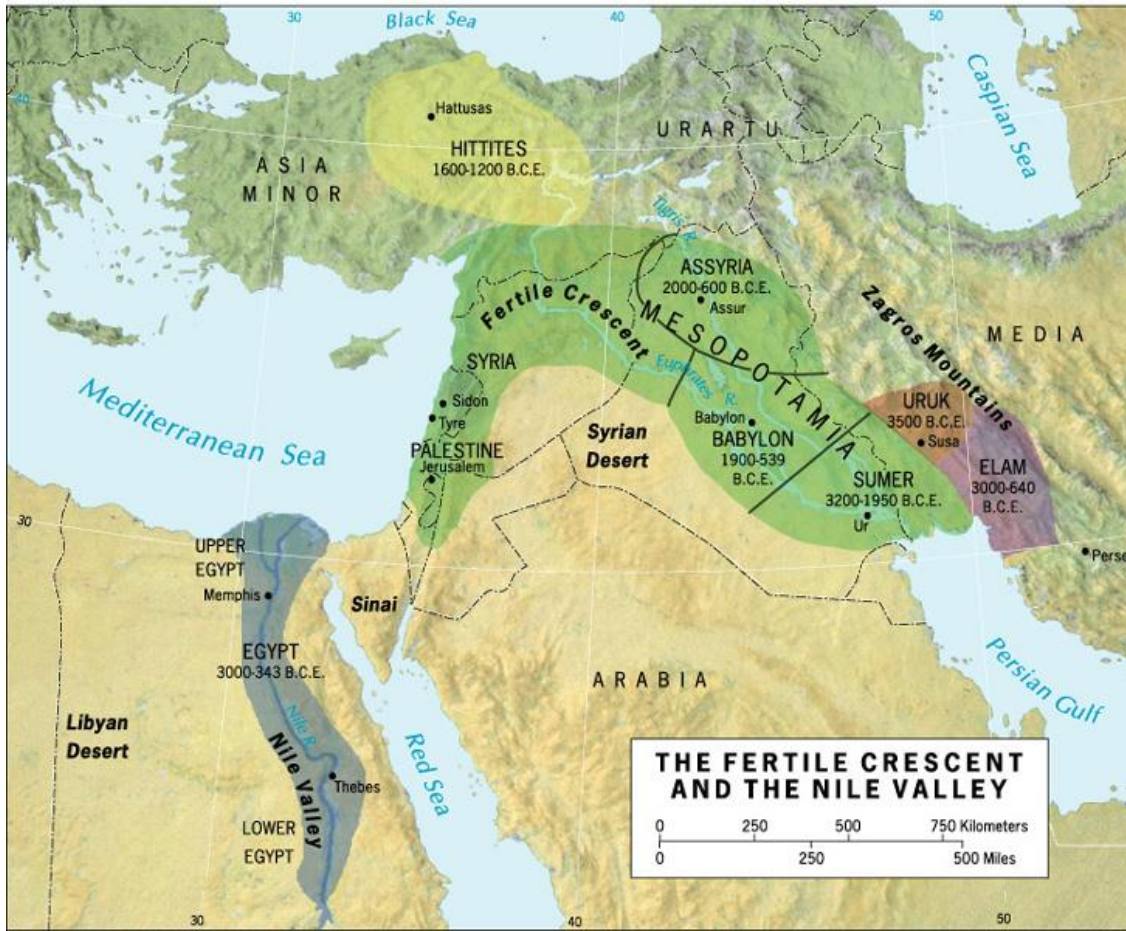
Agricultural Origins-The First Agricultural Revolution

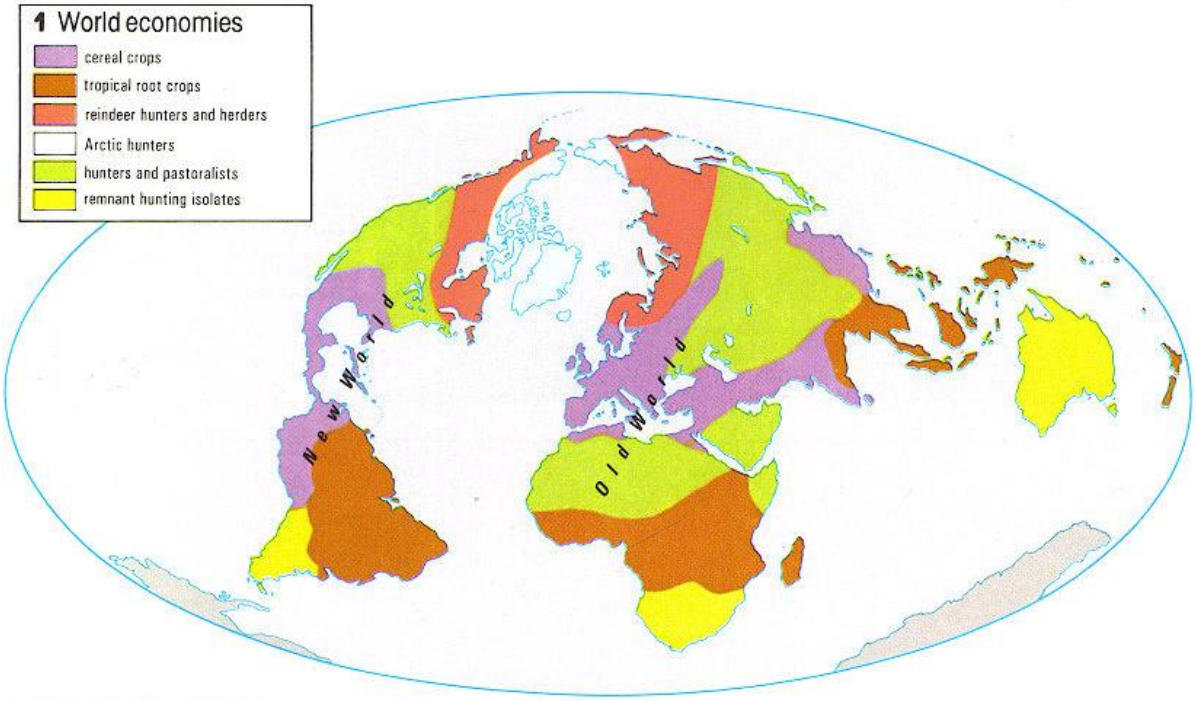
- The first domestication of plants was probably in **South East Asia**-root crops-taro, yams & bananas 14,000 years ago
- **Southwest Asia** domesticated cereal crops such as wheat, barley & oats-10,000 years ago
- **MesoAmerica**-maize (corn), squash & beans
- **Africa**-millet, sorghum, watermelons

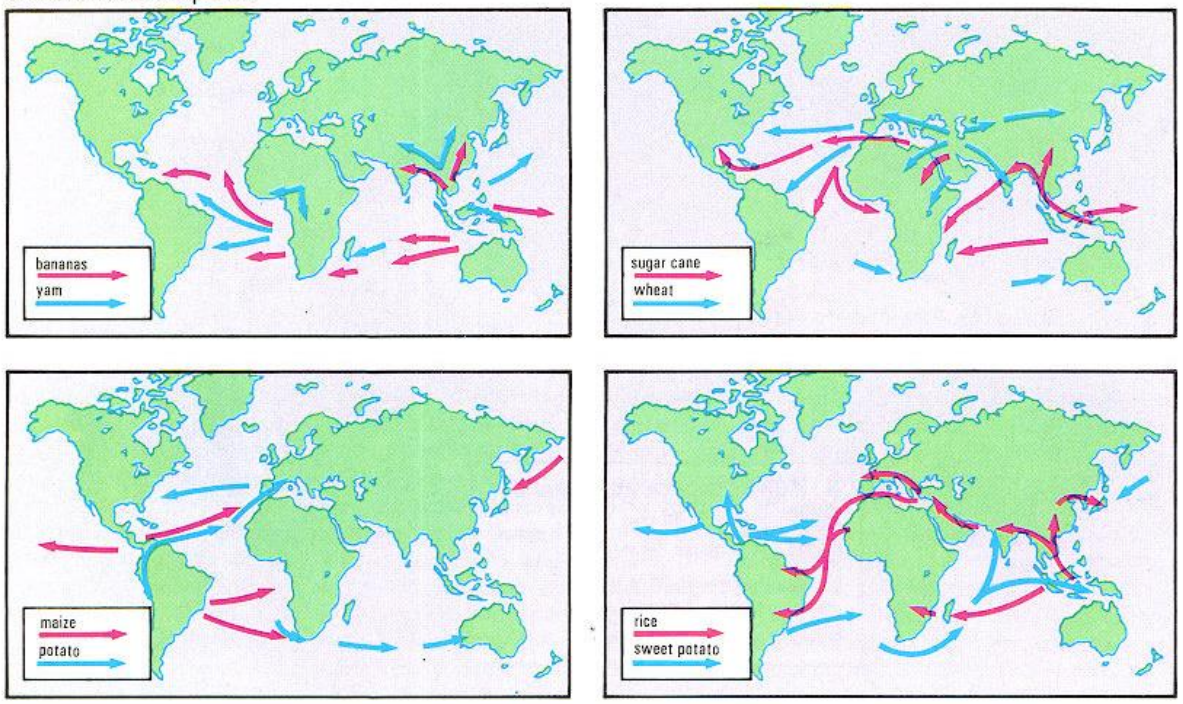
The Fertile Crescent –

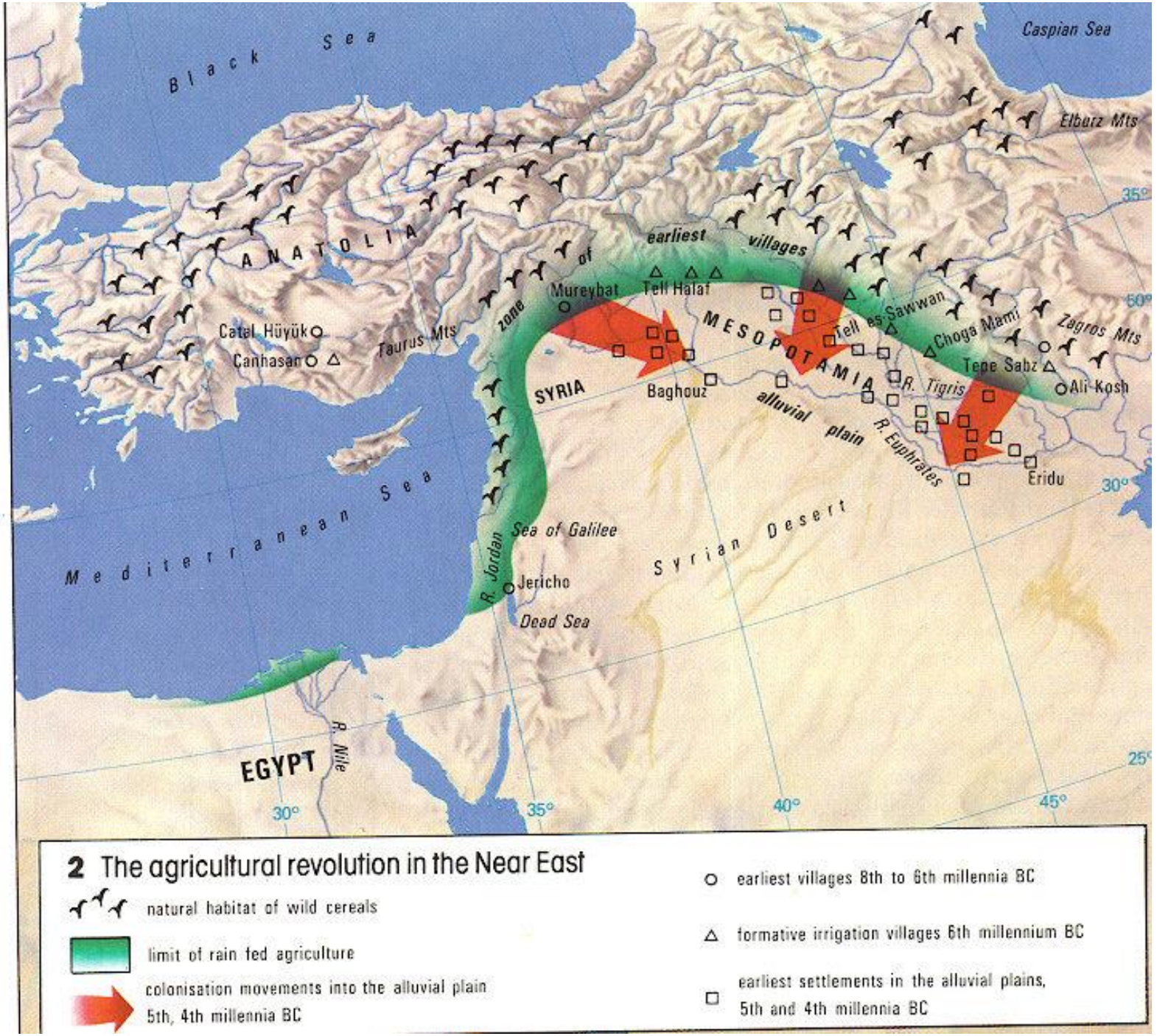
Where the planned cultivation of seed crops began.

- because of seed selection, plants got bigger over time
- generated a surplus of wheat and barley
- first integration of plant growing and animal raising (used crops to feed livestock, used livestock to help grow crops)




1 World economies
cereal crops
tropical root crops
reindeer hunters and herders
Arctic hunters
hunters and pastoralists
remnant hunting isolates
New World
Old World


5 The diffusion of plants
bananas
yam
sugar cane
wheat
maize
potato
rice
sweet potato

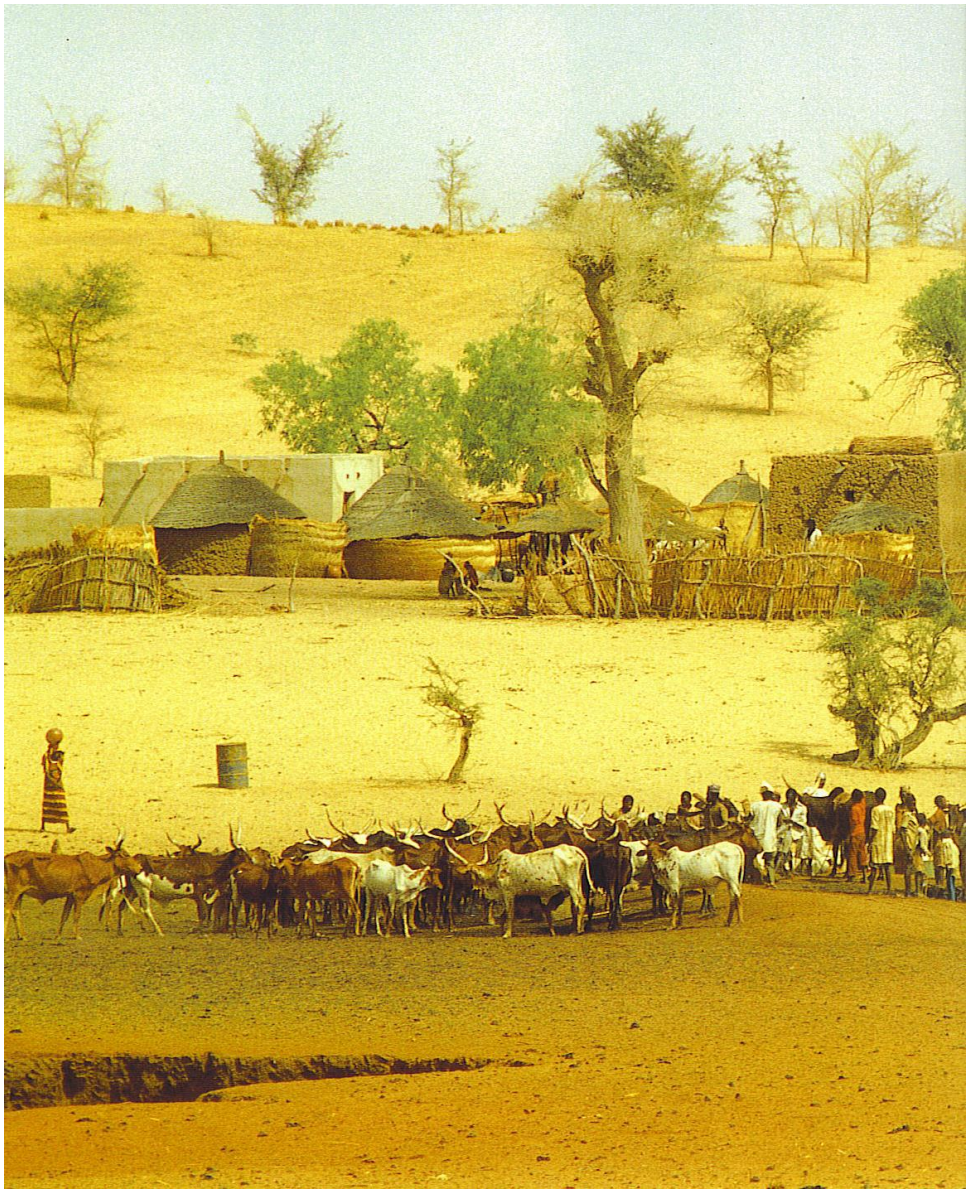


2 The agricultural revolution in the Near East

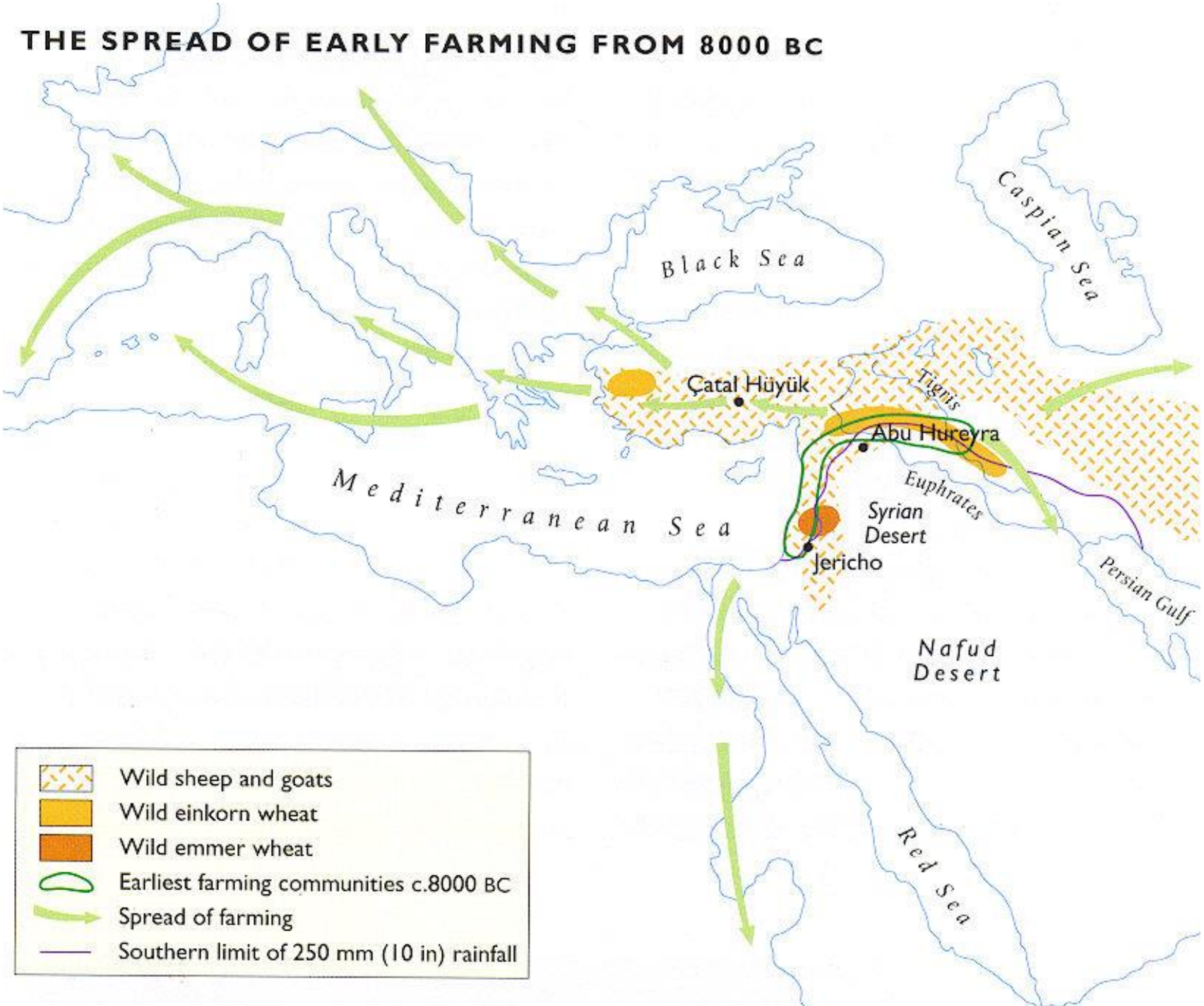
- natural habitat of wild cereals
- limit of rain fed agriculture
- colonisation movements into the alluvial plain 5th, 4th millennia BC
- ○ earliest villages 8th to 6th millennia BC
- △ formative irrigation villages 6th millennium BC
- □ earliest settlements in the alluvial plains, 5th and 4th millennia BC

The First Agricultural Revolution-Animal Domestication

- Animals such as goats, pigs and sheep were domesticated about 8,000 yrs. ago.
- Domesticated animals in captivity are very different from their wild counterparts.
- Southeast Asia-pigs, water buffalo, chickens, ducks and geese were domesticated.



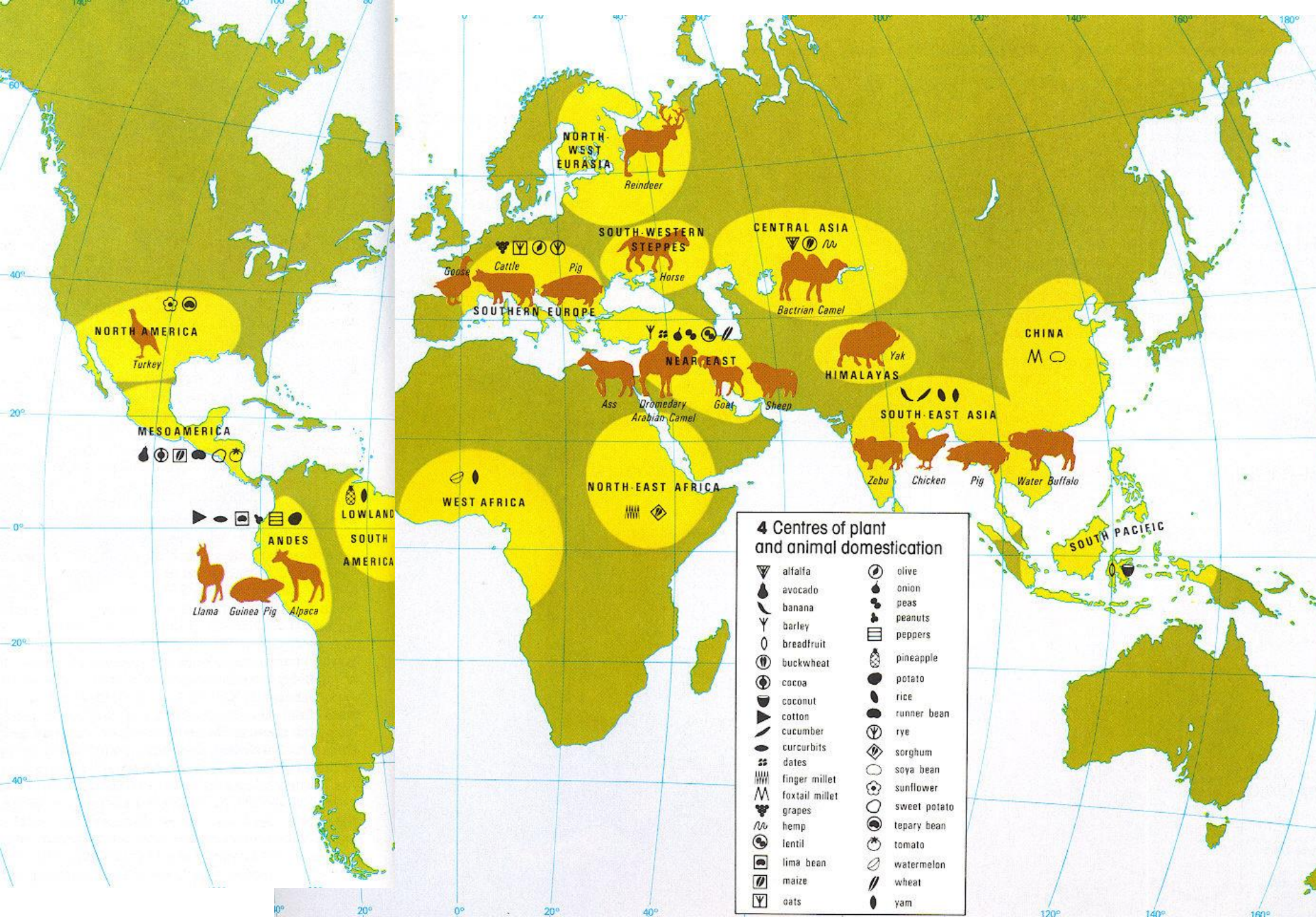
THE SPREAD OF EARLY FARMING FROM 8000 BC



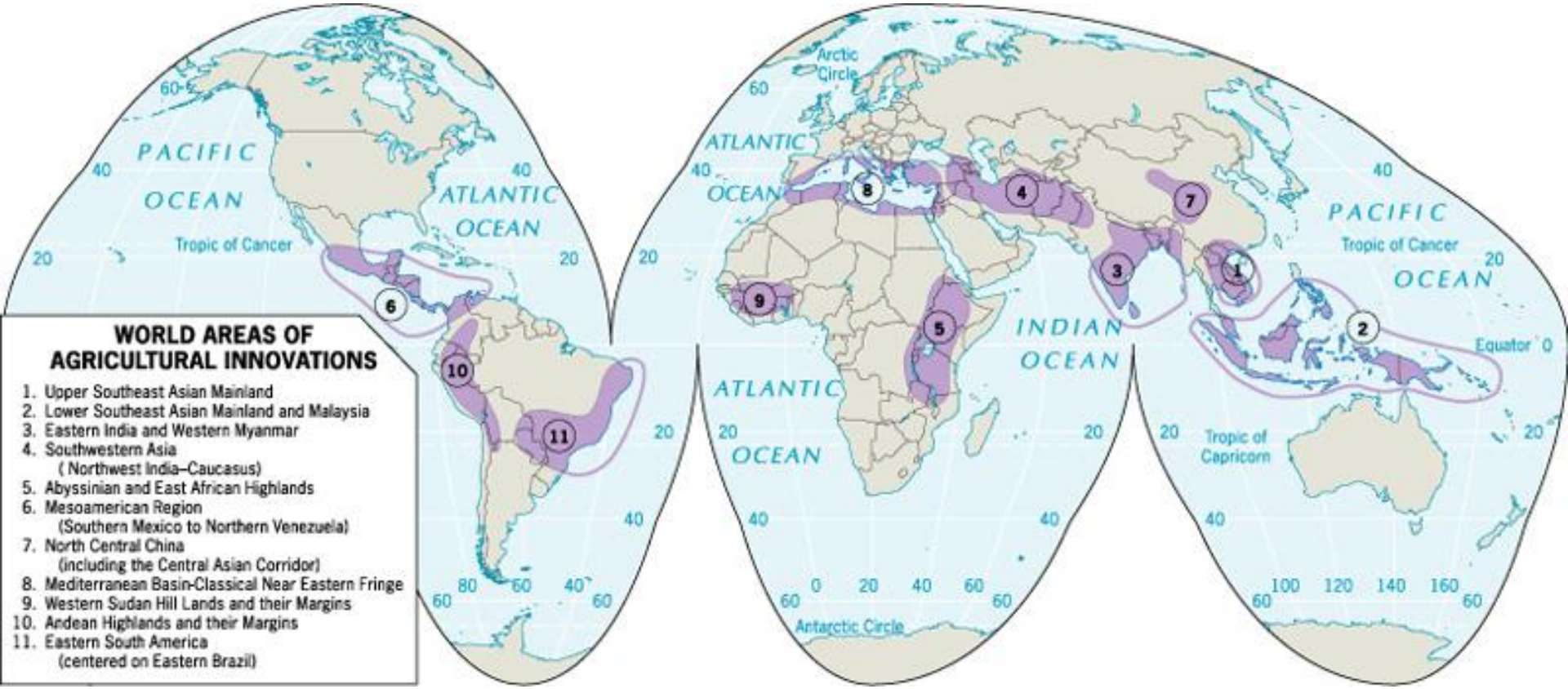
- South Asia-cattle, elephants-but never bred in captivity,
- Southwest Asia-goats, sheep and camel
- Central Asia-yak, horse, goats, sheep and reindeer
- Meso America and South America-llama, alpaca, pig and turkey
- Africa-guinea fowl-only became herders after cattle were brought in from SW Asia
- Total-only about 40 species were domesticated

Animal Domestication –

- Relatively few animals have been domesticated
- Attempts at domestication continue, but most fail


NORTH-WEST EURASIA
Reindeer
SOUTH-WESTERN STEPPES
Horse
CENTRAL ASIA
Bactrian Camel
Goose
Cattle
Pig
SOUTHERN EUROPE
NEAR EAST
Ass
Dromedary
Arabian Camel
Goat
Sheep
HIMALAYAS
Yak
CHINA
SOUTH-EAST ASIA
Zebu
Chicken
Pig
Water Buffalo
NORTH AMERICA
Turkey
MESOAMERICA
WEST AFRICA
NORTH-EAST AFRICA
ANDES
LOWLAND SOUTH AMERICA
Llama
Guinea Pig
Alpaca
SOUTH PACIFIC
4 Centres of plant and animal domestication
altaifa
avocado
banana
barley
breadfruit
buckwheat
cocoa
coconut
cotton
cucumber
curcurbits
dates
finger millet
foxtail millet
grapes
hemp
lentil
lima bean
maize
oats
olive
onion
peas
peanuts
peppers
pineapple
potato
rice
runner bean
rye
sorghum
soya bean
sunflower
sweet potato
tepary bean
tomato
watermelon
wheat
yam

World Areas of Agricultural Innovations



Carl Sauer identified 11 areas where agricultural innovations occurred.

Chief Source Regions of Important Crop Plant Domestications

A. Primary Regions of Domestications

1. The Upper Southeast Asian Mainlands

Citrus Fruits*	Bamboos*	Yams*	Rices*	Eugenias*	Lichi	Teas	Ramie
Bananas*	Taros*	Cabbages*	Beans*	Job's tears	Longan	Tung oils	Water chestnut

2. Lower Southeast Asian Mainland and Malaysia (including New Guinea)

Citrus fruits*	Taros*	Pandanuses	Breadfruits	Lanzones	Vine peppers*	Nutmeg	Areca
Bananas*	Yams*	Cucumbers*	Jackfruits	Durian	Gingers*	Clove	Abaca
Bamboos*	Almonds*	Sugarcanes	Coconuts	Rambutan	Brinjals*	Cardamom	

3. Eastern India and Western Burma

Bananas*	Beans*	Millets*	Grams	Vine peppers*	Mangoes	Safflower	Lotus
Yams*	Rices*	Sorghums*	Eggplants	Gingers*	Kapok*	Jute	Turmeric
Taros*	Amaranths*	Peas*	Brinjals*	Palms*	Indigo	Sunn Hemp	

4. Southwestern Asia (Northwest India-Caucasus)

Soft wheats*	Peas*	Rye*	Beets*	Hemp	Soft Pears*	Pomegranates	Walnuts
Barleys*	Oil seeds*	Onions	Spinach	Apples	Cherries*	Grapes*	Melons
Lentils*	Poppies	Carrots*	Sesames	Almonds*	Plums*	Jujubes*	Tamarind
Beans*	Oats*	Turnips	Flax	Peaches*	Figs	Pistachio	Alfalfa

5. Ethiopian and East African Highlands

Hard wheats*	Sorghums*	Barleys	Beans*	Oil seeds*	Melons*	Coffees	Okras
Millets*	Rices*	Peas*	Vetches	Cucumbers*	Gourds*	Castor beans	Cottons*

6. Meso-American Region (Southern Mexico to Northern Venezuela)

Maizes	Taros*	Tomatoes*	Avocados	Muskmelons	Cottons*
Amaranths*	Sweet potatoes	Chili peppers	Sapotes	Palms*	Agaves
Beans*	Squashes	Custard apples	Plums*	Manioc	Kapok

B. Secondary Regions of Domestications

7. North-Central China (including the Central Asian corridor)

Millets*	Soybeans	Naked oat*	Mulberries	Bush cherries*	Peaches*
Barleys*	Cabbages*	Mustards	Persimmons	Hard pears*	Jujubes*
Buckwheats	Radishes*	Rhubarb	Plums*	Apricots	

8. Mediterranean Basin—Classical near eastern Fringe

Barleys*	Lentils*	Grapes*	Dates	Parsnips	Lettuces	Carrots*	Sugar beet
Oats*	Peas*	Olives	Carobs	Asparagus	Celeries	Garlic	Leek

9. Western Sudan Hill Lands and Their Margins

Sorghums*	Rices*	Yams*	Peas*	Melons*	Oil palms	Kola nut
Millets*	Fonio	Beans*	Oil seeds*	Gourds*	Tamarind*	

10. Andean Highlands and Their Margins

White potatoes	Tomatoes*	Beans*	Quinoa	Cubio	Ulluco
Pumpkins	Strawberries	Papayas	Oca	Arrocacha	

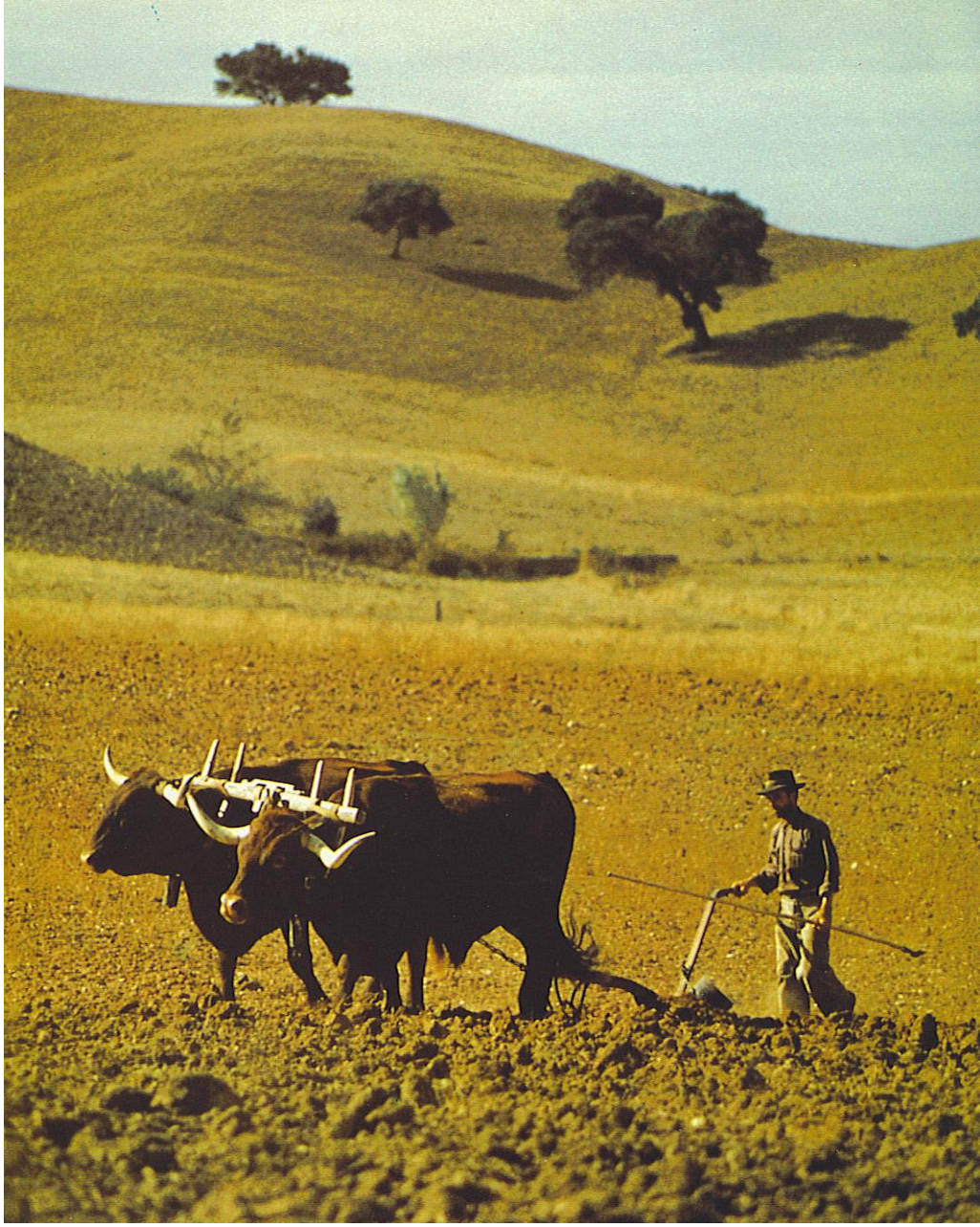
11. Eastern South America (centered on Eastern Brazil)

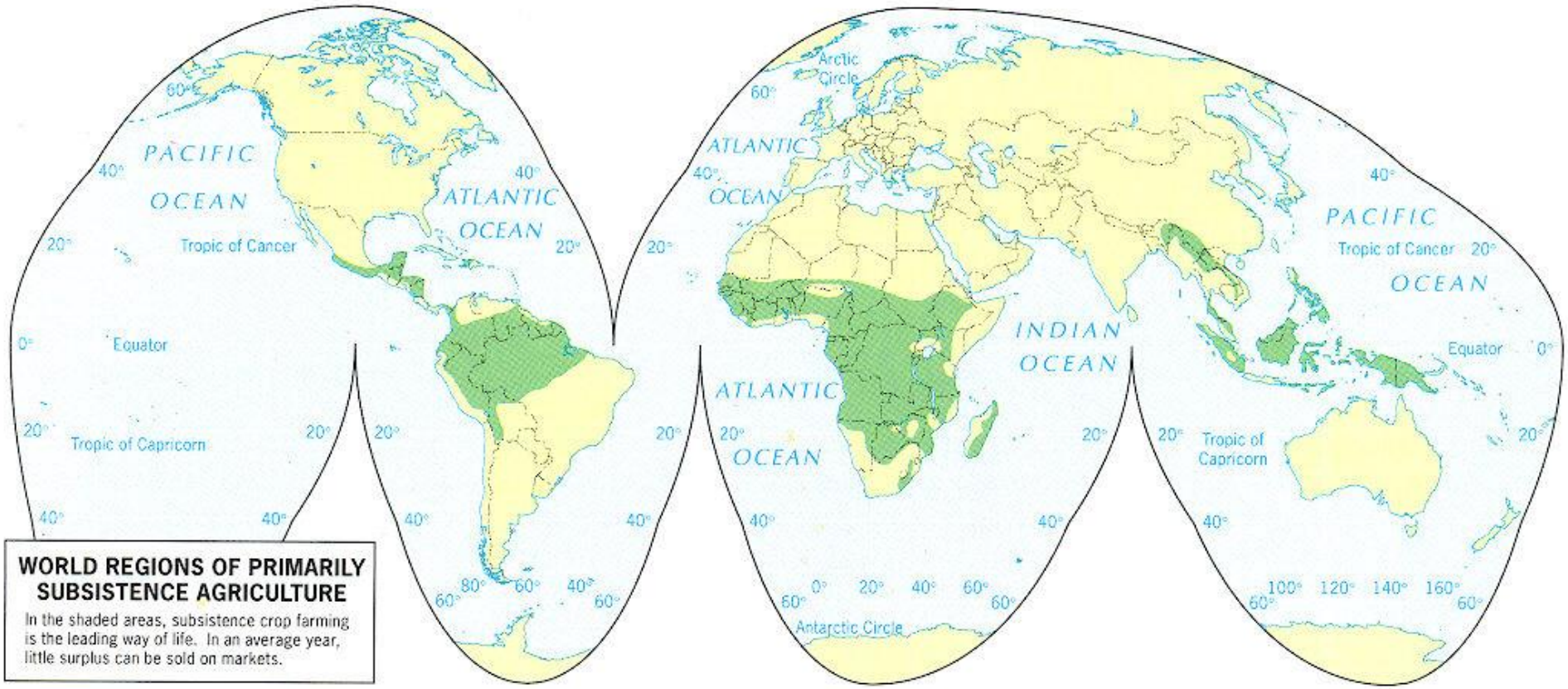
Taros*	Peanuts	Cashew nut	Cacao	Cottons*
Beans*	Pineapples	Brazil nut	Passion fruits	Tobaccos

Subsistence Farming

- World-wide most farmers are subsistence-growing just enough to feed their families.
- They find building material and fuel in the natural environment-no cash economy
- Small fields-intensive farming on land they often don’t own.
- Methods and tools used are generally very low tech.
- Found in South & Central America, Africa, South Asia, and South East Asia

On the Greek island of Crete, a peasant plows a field with a donkey





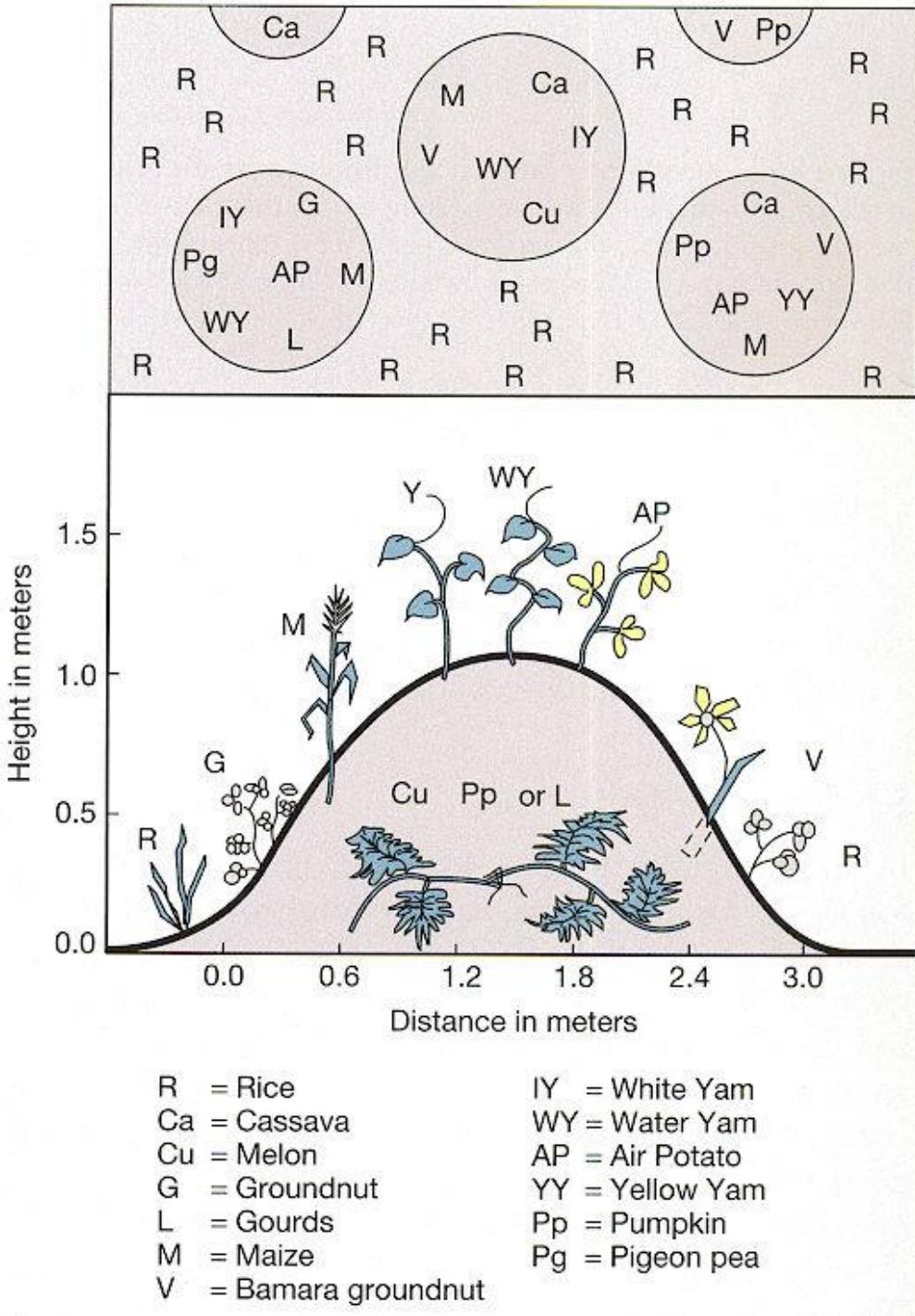
WORLD REGIONS OF PRIMARILY SUBSISTENCE AGRICULTURE

In the shaded areas, subsistence crop farming is the leading way of life. In an average year, little surplus can be sold on markets.

Shifting Agriculture-Slash & Burn, Patch or Milpa

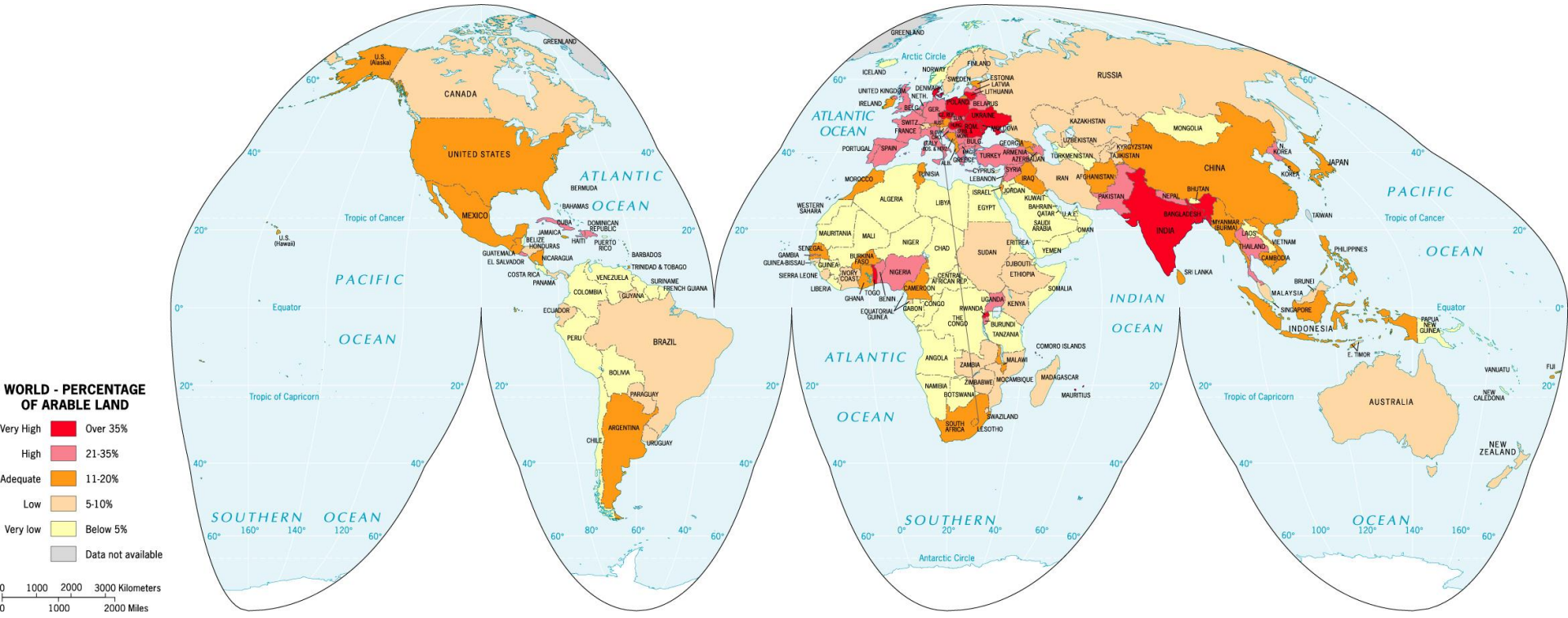
- Tropical areas-red soil is heavily leached.
- Plot of land is cleared by burning-ash replenishes soil.
- A type of crop rotation-tubers in warm tropics, grains in humid subtropics, fruit in cooler regions.
- Not nomadic-central village with parcels of land worked in succession
- Conserves forests & soil, requires organization

- **Intertillage** spreads food production over the farming season
- It reduces the loss from disease or pests or drought.
- It helps control soil erosion and soil depletion.
- Hill planted crops have deeper root systems and tall stalks while flat earth crops are spreaders.
- No expensive fertilizer, pesticides, herbicides or machines are necessary



- Agricultural Societies are classified as:
  - Subsistence or Primitive
  - Intermediate or Traditional
  - Developed or Modern
- Colonial Powers-Bad Points
  - Tried to compel subsistence farmers to modernize by charging them taxes
  - Made them devote valuable land to cash crops like cotton
- Colonial Powers-Good Points
  - Conducted soil surveys
  - Built irrigation systems
  - Established lending agencies to loan money to farmers

Arable Land Percent Arable by Country



Does the percent of land that is arable in a country determine the agricultural output or the calorie consumption in a country?

Subsistence Agriculture

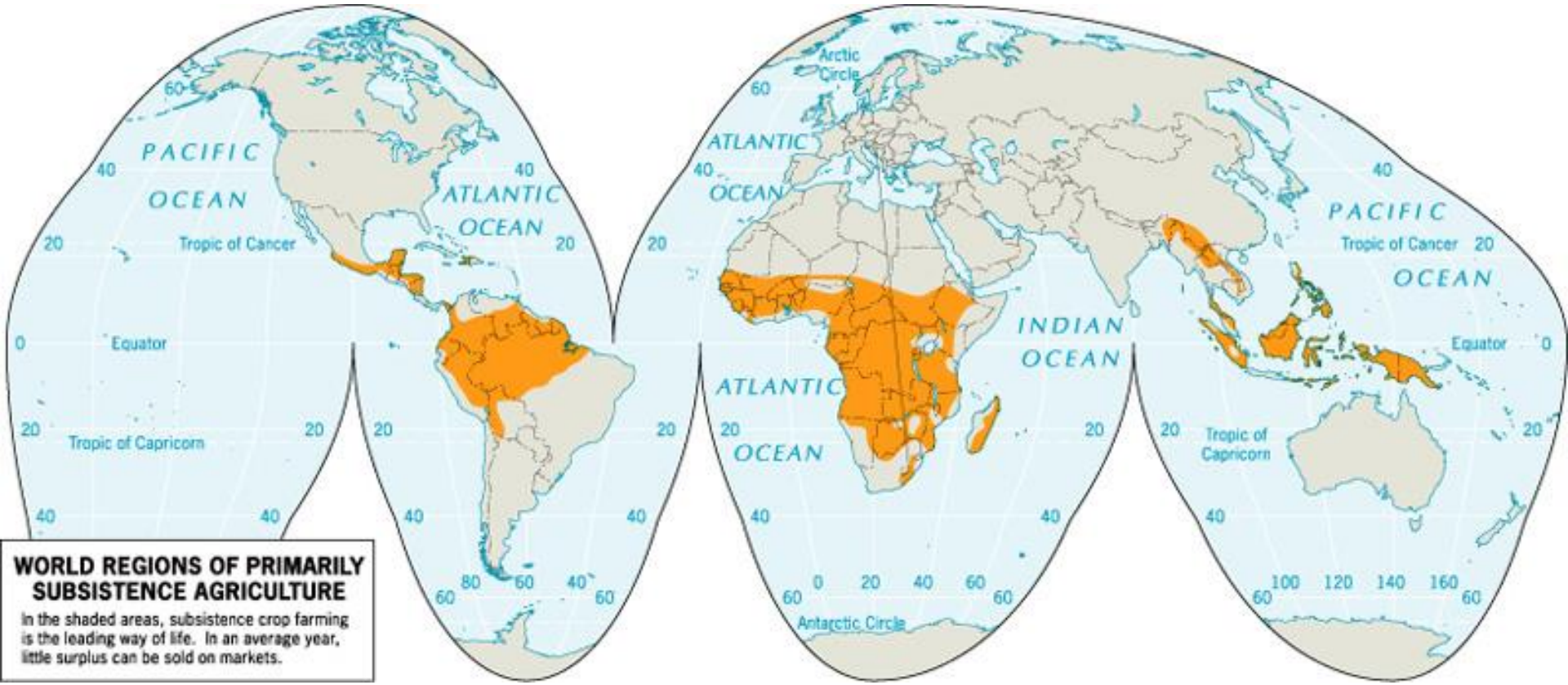
- **Subsistence Agriculture** –

  Agriculture in which people grow only enough food to survive.

  - farmers often hold land in common

  - some are sedentary, and some practice shifting cultivation

    * slash-and-burn



World Regions of Primarily Subsistence Agriculture

On this map, India and China are not shaded because farmers sell some produce at markets; in equatorial Africa and South America, subsistence farming allows little excess and thus little produce sold at markets.

Above-Herding sheep in the Middle East

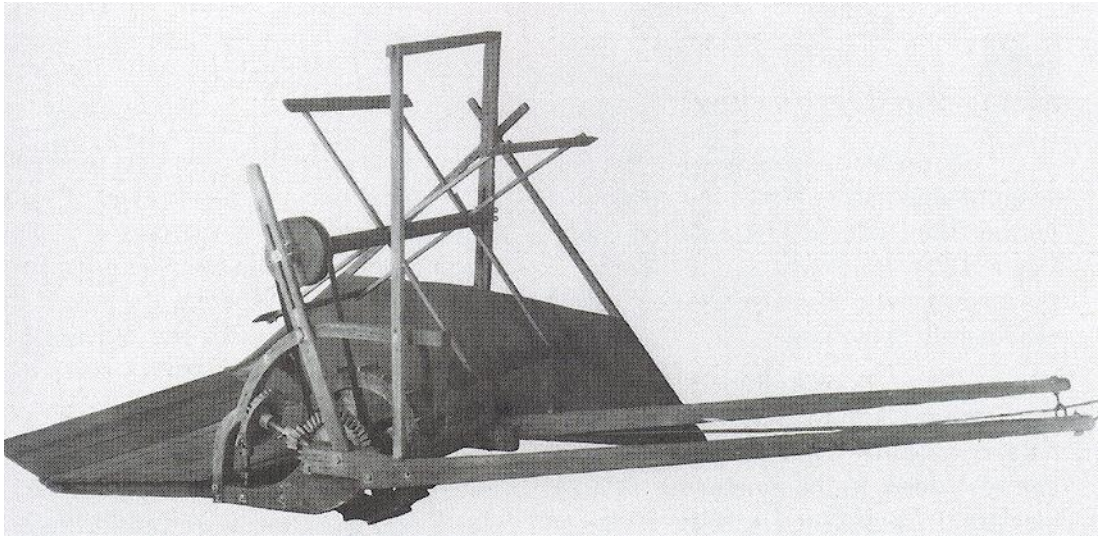
Right-Cattle crossing the Niger River

Left-Haiti, a woman carries bananas to market

Right-Iranian Farmers winnowing wheat

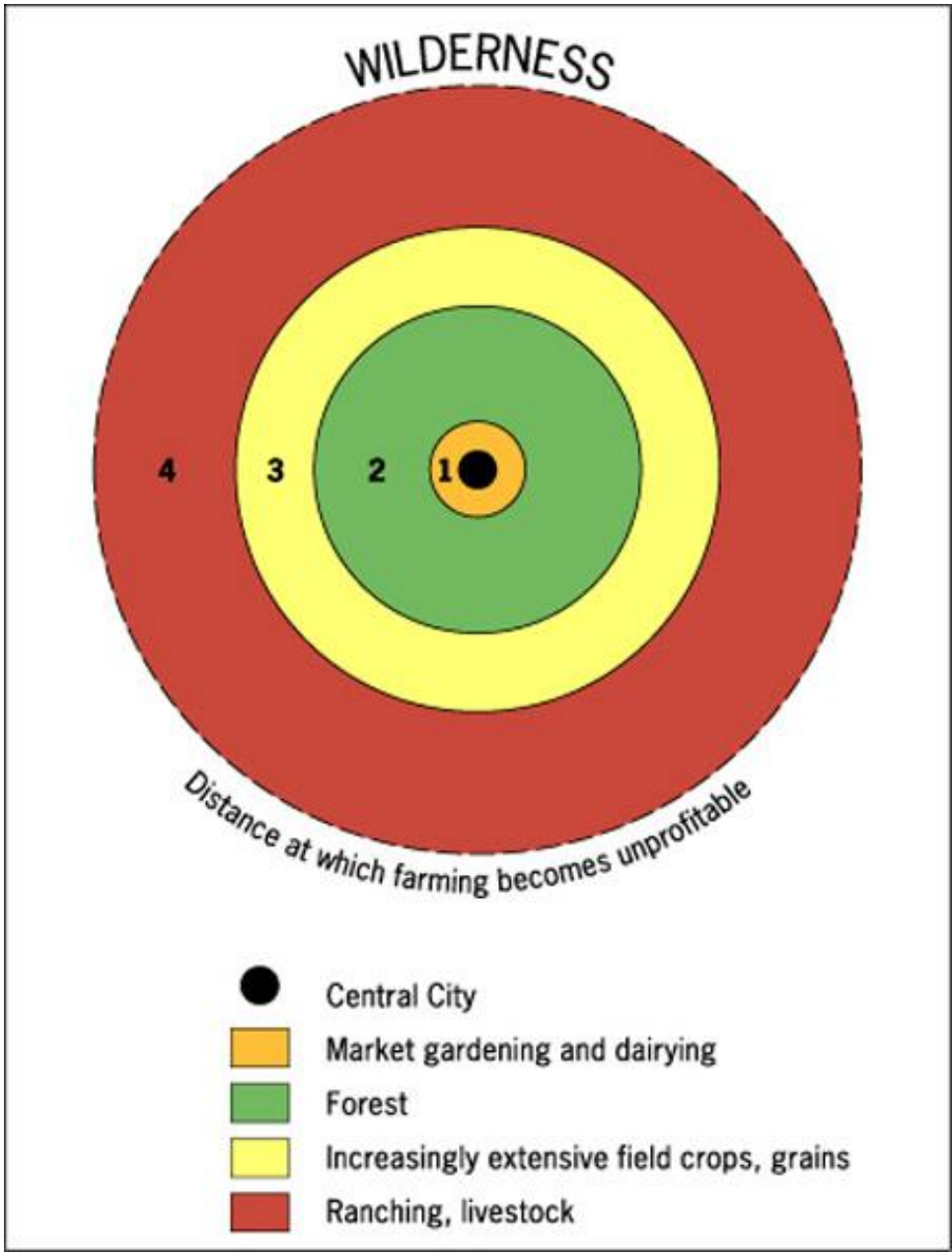
Second Agriculture Revolution

- A series of innovations, improvements, and techniques used to improve the output of agricultural surpluses (started before the industrial revolution). eg.
  - seed drill
  - new crops-potatoes & corn
  - advances in livestock breeding
  - new soil preparation methods & new fertilizers



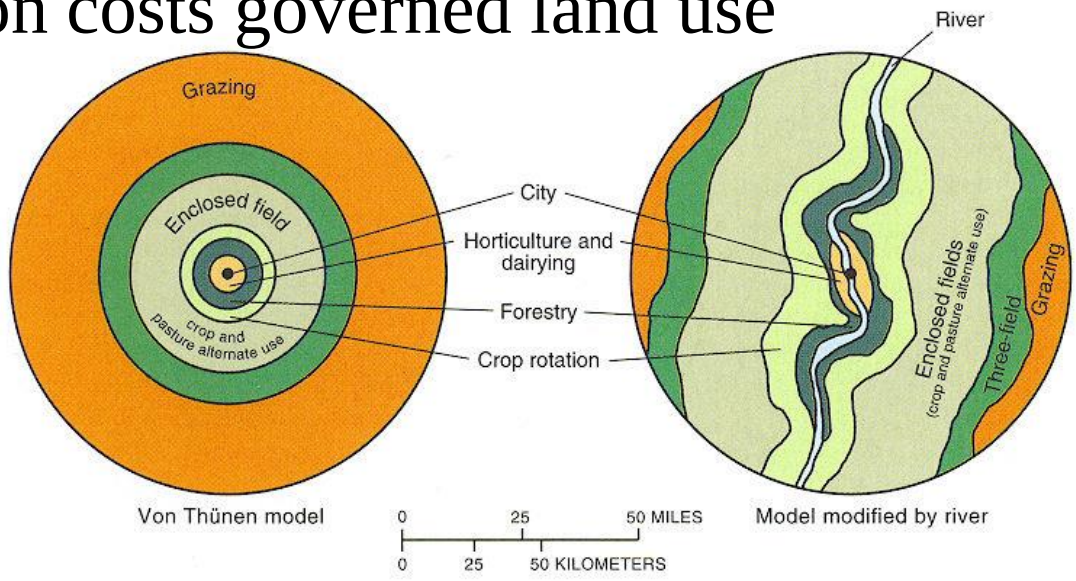
Von Thünen Model

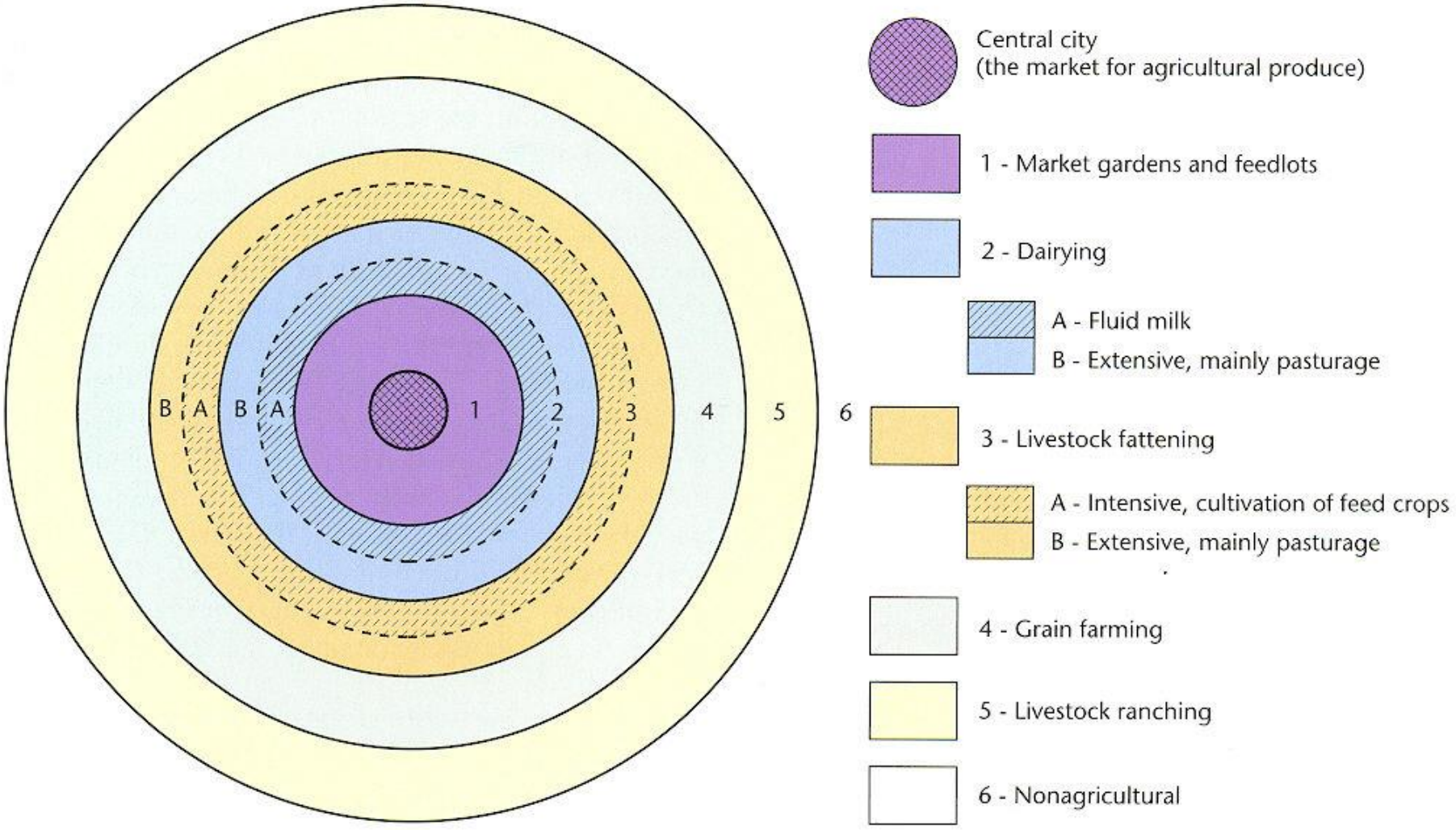
- **Von Thünen Model**
  - What farmers produce varies by distance from the town, with livestock raising farthest from town.
  - Cost of transportation governs use of land.
  - First effort to analyze the spatial character of economic activity.



Von Thünen

- Johann Heinrich von Thünen (1783-1850) wrote ***Der Isolierte Staat*** (***The Isolated State***) which is the foundation of location theory.
- Noted how crops near Rostock, Germany changed with no change in soil-mapped the pattern
- With terrain, soils and rainfall the same he created the ringed-pattern
- Noted that transportation costs governed land use





Von Thünen Model

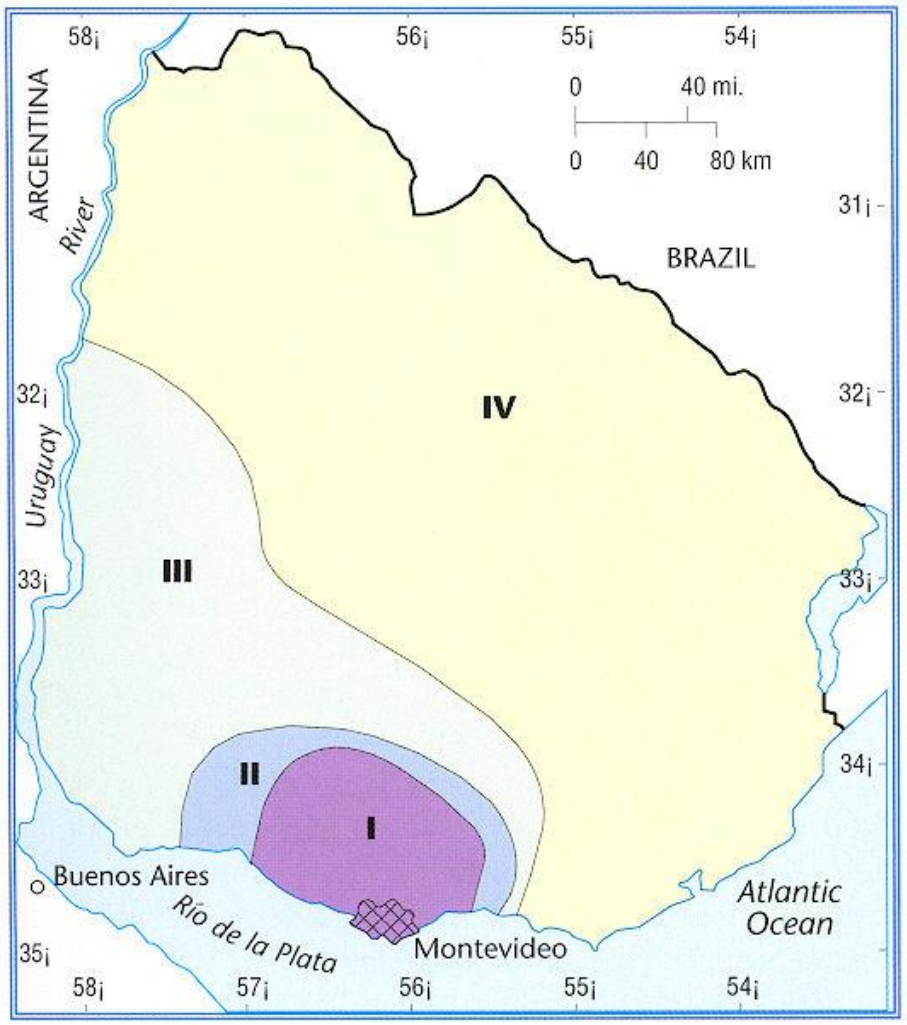
Application of Von Thünen Model

- Geographer Lee Liu studied the spatial pattern of agriculture production in China.

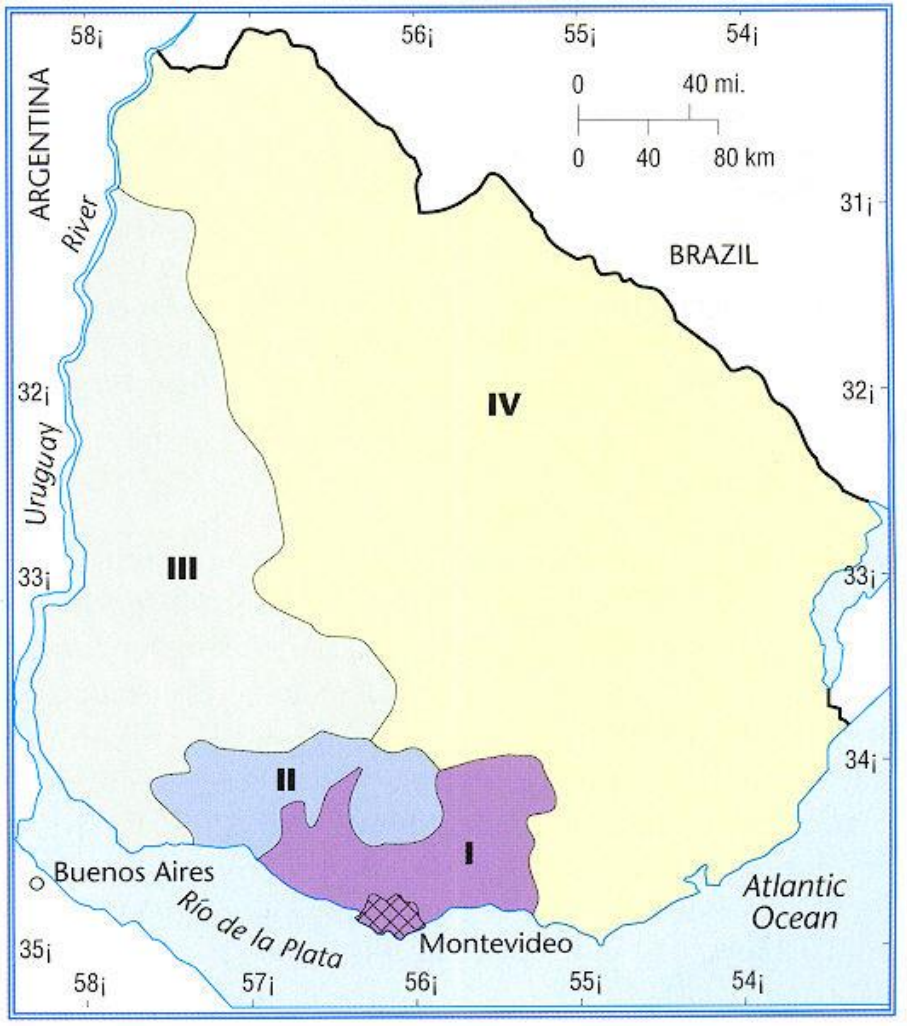
  Found:

  - farmers living in a village farm both lands close to the village and far away intensively
  - methods varied spatially – resulting in land improvement (by adding organic material) close to village and land degradation (lots of pesticides and fewer conservation tactics) farther from village.

As Predicted by the Modified von Thünen Model



Actual Types of Agriculture



I Market gardening

II Dairying

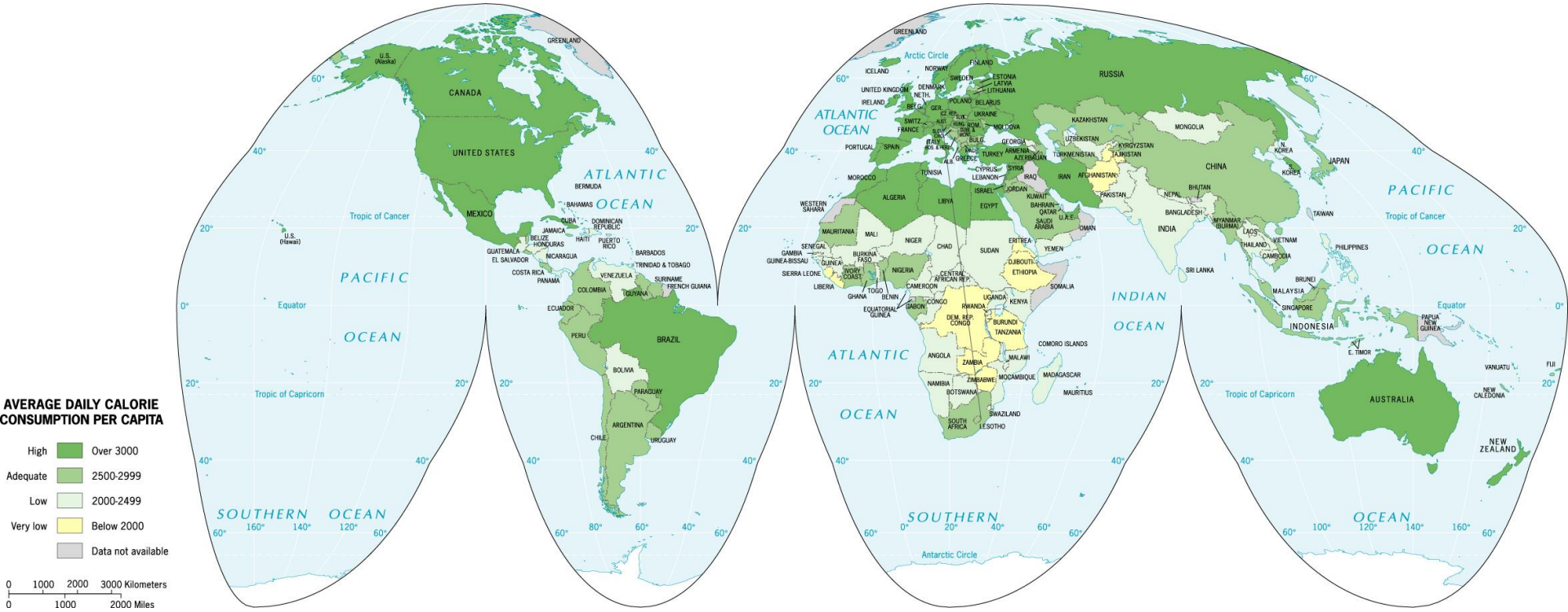
III Grain farming

IV Livestock ranching

Third Agriculture Revolution
(Green Revolution)

- invention of high-yield grains, especially rice, with goal of reducing hunger.
  - increased production of rice
  - new varieties in wheat and corn
  - reduced famines due to crop failure,
    now most famines are due to
    political problems
  - impact (in terms of hunger) is greatest
    where rice is produced

Average Daily Calorie Consumption per Capita



Opposition to Green Revolution

- Opposition argues Green Revolution has led to:
  - vulnerability to pests
  - Soil erosion
  - Water shortages
  - Micronutrient deficiencies
  - Dependency on chemicals for production
  - Loss of control over seeds

Opposition to Green Revolution

- Genetically engineered crops are yielding some ethical problems. In the semi-periphery, farmers typically keep seeds from crops so that they can plant the seeds the next year. Companies that produce genetically engineered seeds do not approve of this process; generally, they want farmers to purchase new seeds each year.
- Many semi-periphery farmers can not afford the new seeds, fertilizers, pesticides or herbicides.
- Some of the poorest areas of the world have benefited the least from the Green Revolution-especially Africa.
- Small farms can't take advantage of the innovations- India 4 acres, Bangladesh 1.8 acres, China ½ acre

Regional and Local Change

Geographer Judith Carney finds that changing agricultural practices alter the rural environment and economy and also relations between men and women. Lands used traditionally by women to grow food for their families

In Gambia, international development projects have converted wetlands into irrigated agricultural lands, in order to make production of rice year round.

Year Round Rice Production –

- lands that used to be used for family subsistence are now used for commercialized farming with revenues going to the men.
- women do the work of rice production and see little of the benefit because of the power relations in Gambia

Cadastral Systems

- **Township and Range System**

  (rectangular survey system) is based on a grid system that creates 1 square mile sections. US method adopted after the Revolutionary War. Homestead Act-160 acres (1 section) given after 5 years of working the land)

- **Metes and Bounds Survey**

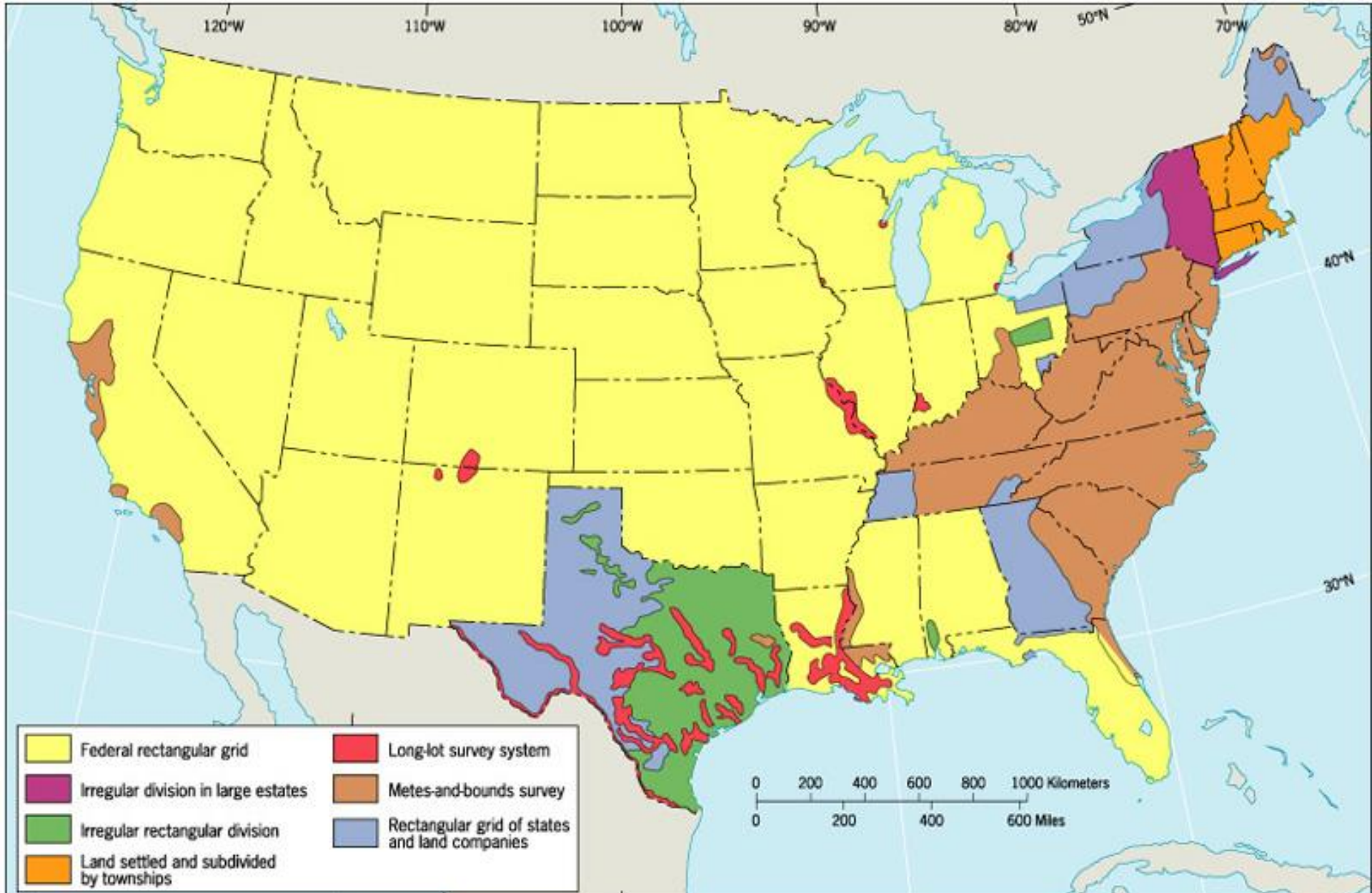
  uses natural features to demarcate irregular parcels of land. Found on the east coast of North America

- **Longlot Survey System**

  divides land into narrow parcels stretching back from rivers, roads, or canals. Found in Canadian maritimes & Quebec, a remnant of French rule

- **Primogentiture-**Germanic custom-first born son inherits all land-North America, Northern Europe, Australia etc.

Dominant Land Survey Patterns in the US



Township and Range –

The cultural landscape of Garden City, Iowa reflects the Township and Range system. Townships are 6x6 miles and section lines are every 1 mile.

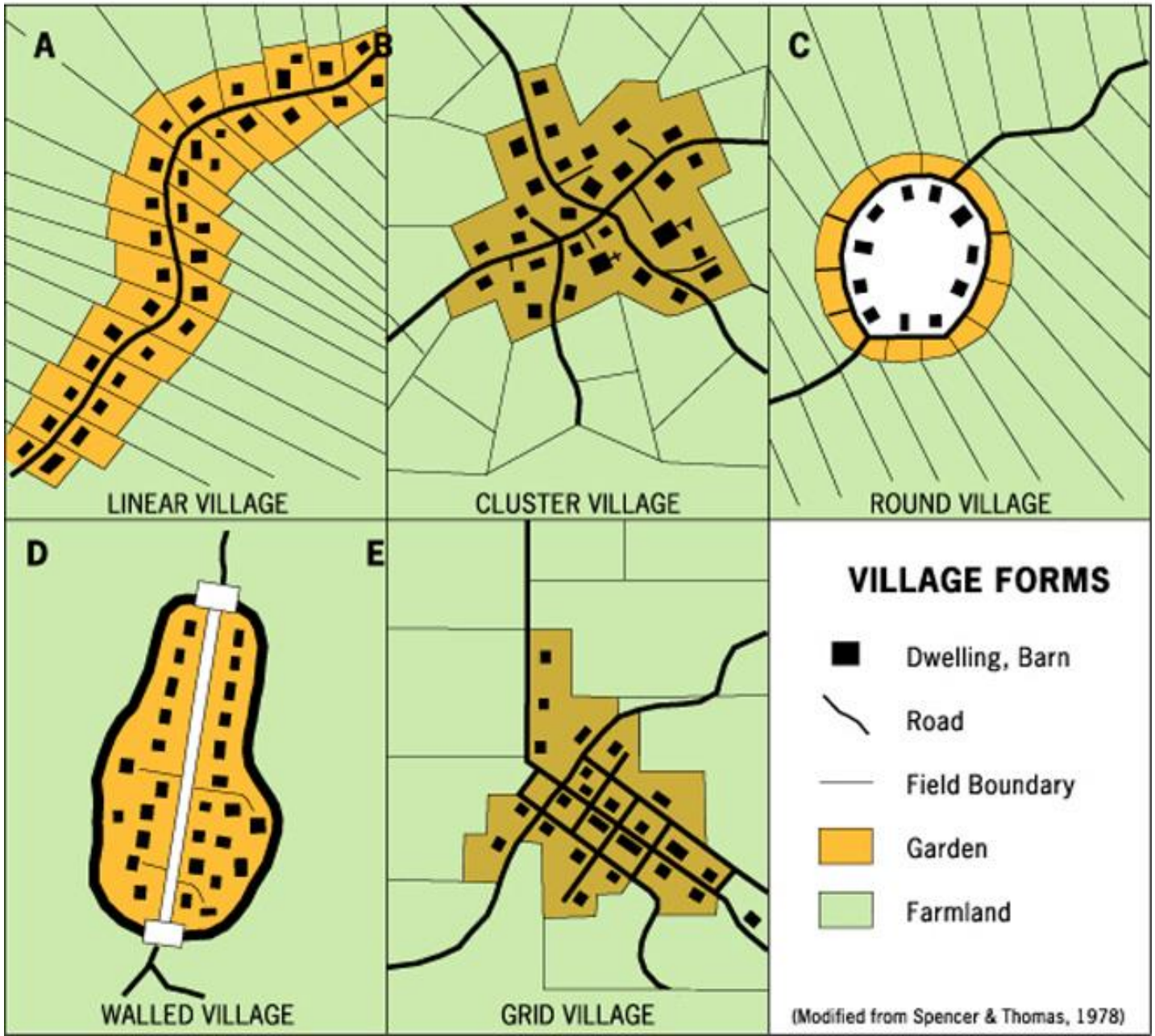
Longlot Survey System –

The cultural landscape of Burgundy, France reflects the Longlot Survey system, as land is divided into long, narrow parcels. People live in nucleated villages and land ownership is highly fragmented.

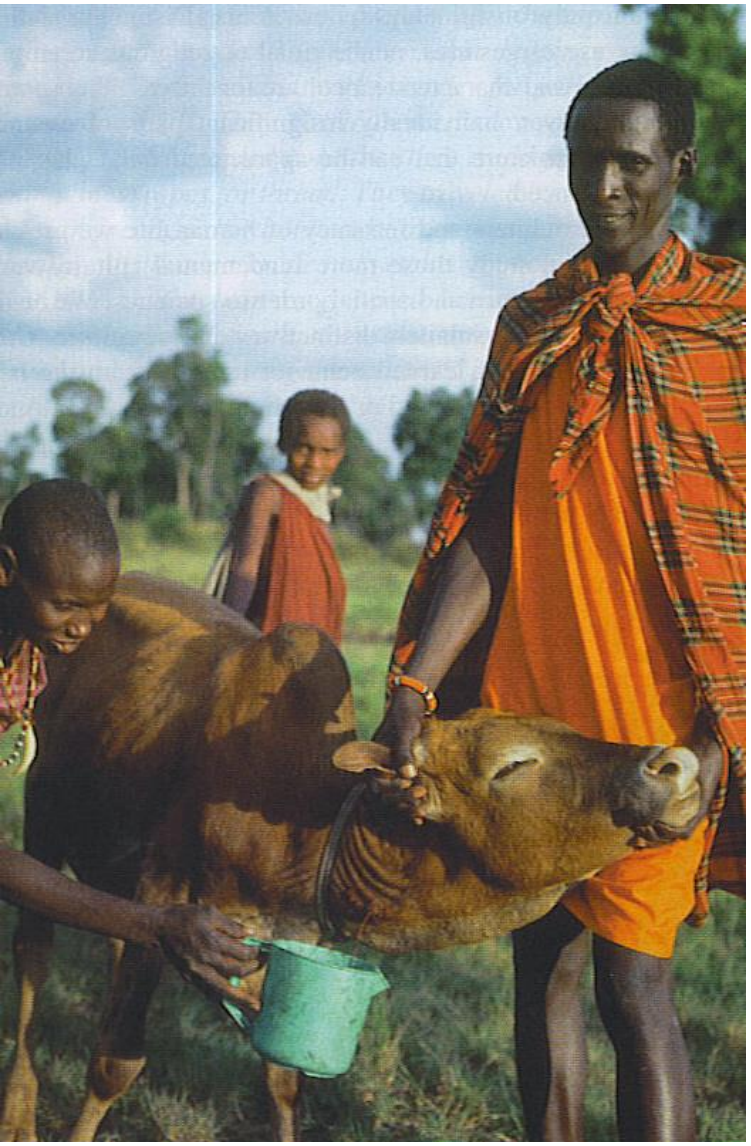
Agricultural Villages

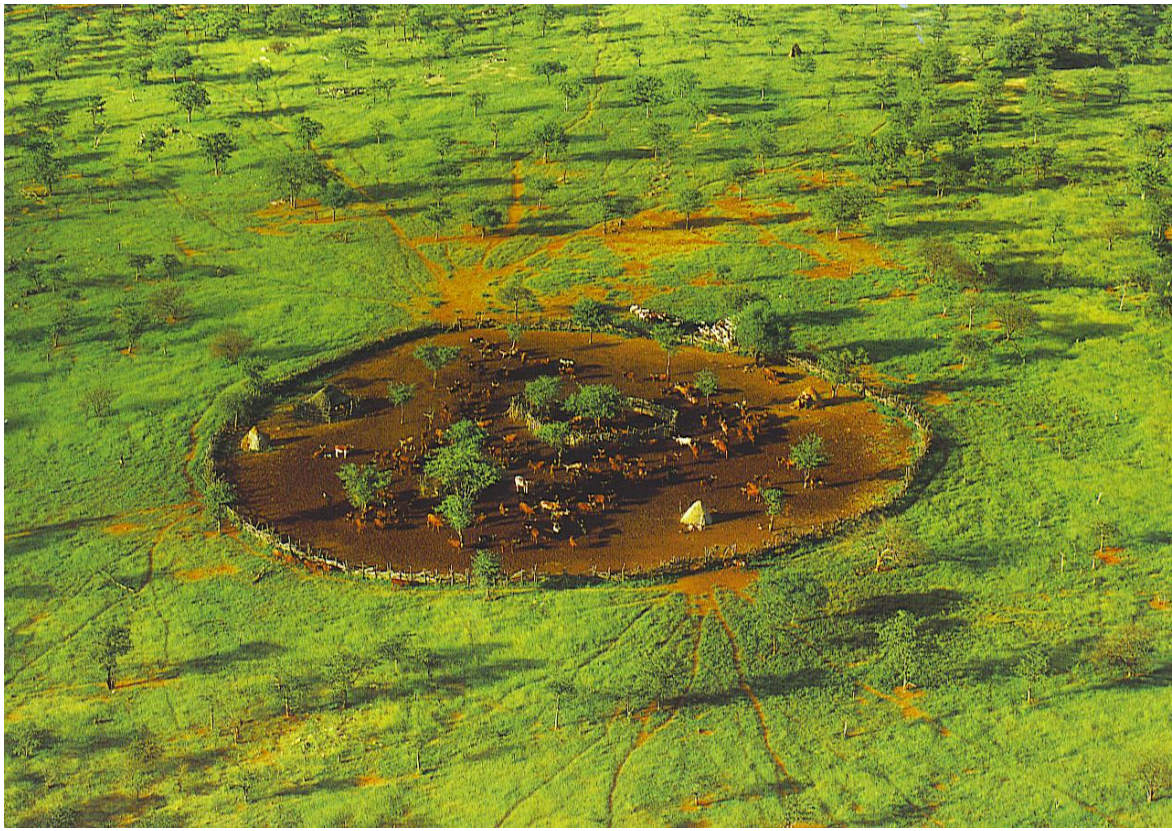
- **Nucleated settlement-**intense cultivation with homes clustered in a village-most of the world's farms are nucleated.
- **Dispersed settlement-**individual farm house widely spaced-North America
- **Linear Village-**follows a stream or road
- **Cluster Village-**(nucleated) intersection of roads
- **Round Village-**to corral livestock (rundling-Slavic farmers)
- **Walled Village-**e.g. Medieval Europe
- **Grid Village-**Spanish colonial villages & modern day planned-towns

Village Forms



Nordlingen, Germany built in the Middle Ages circa, 14th Century

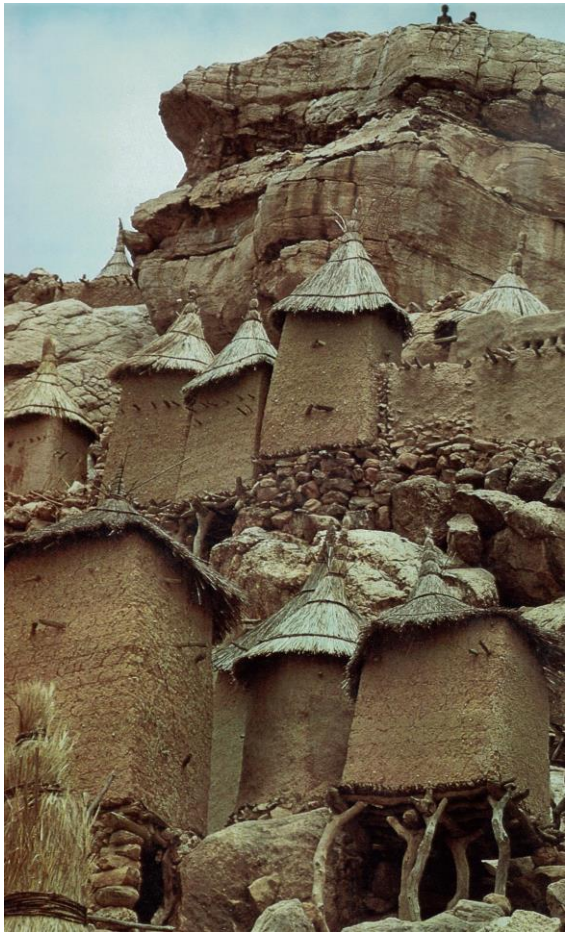


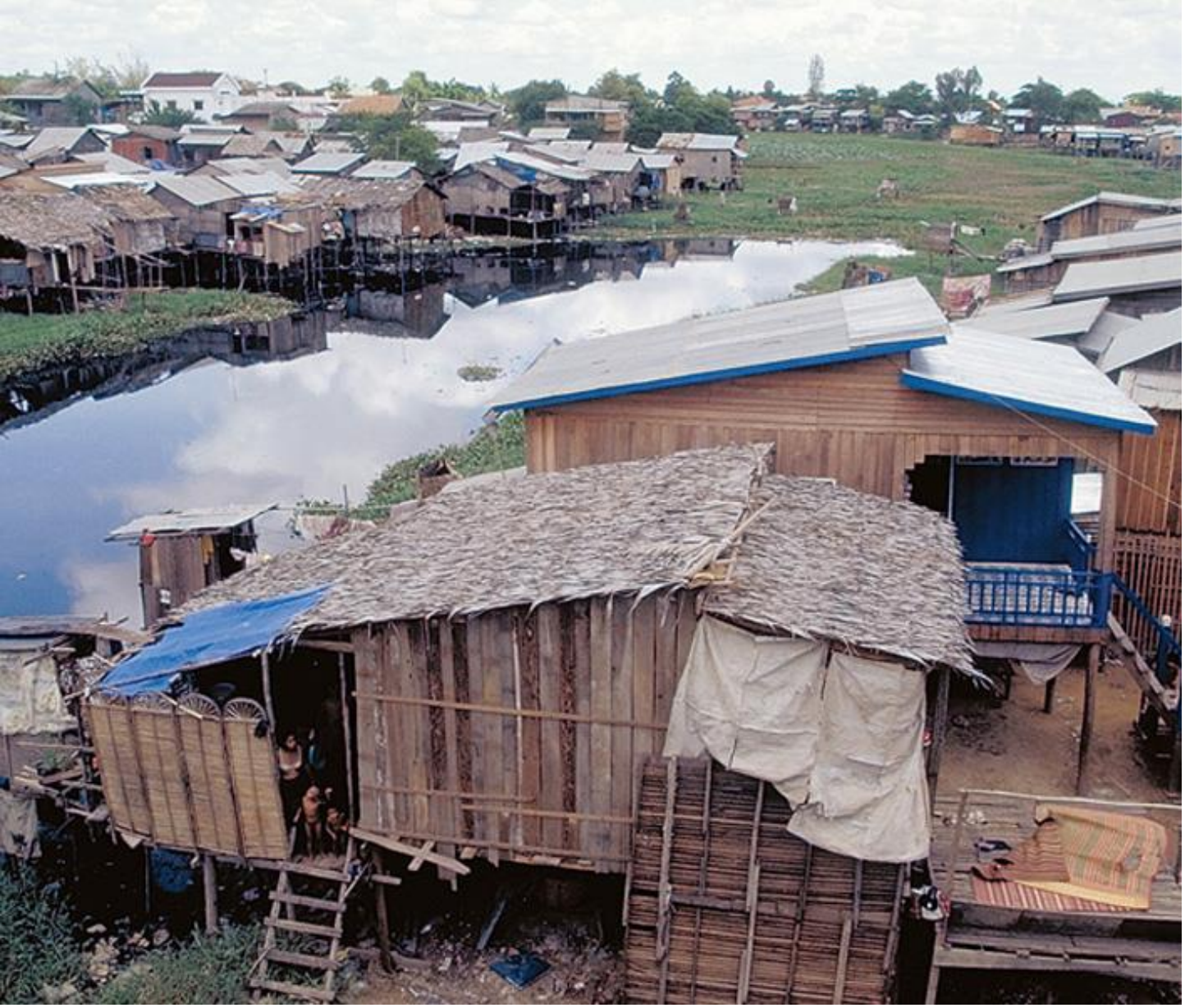


Top-a Namibian village or kraal to protect livestock
Right-Masaai use the blood of their livestock for food.

Functional Differentiation within Villages

- Cultural landscape of a village reflects:
  - Social stratification (How is material well being reflected in the spaces of a village?)
  - Differentiation of buildings (What are they used for? How large are they?)





Stilt village in Cambodia- Buildings look alike, but serve different purposes.

Farm in Minnesota

each building serves a different purpose

Agriculture

- Commercial Agriculture

Term used to describe large scale farming and ranching operations that employ vast land bases, large mechanized equipment, factory-type labor forces, and the latest technology.

- roots are in colonial agriculture
- today, global production made possible by advances in transportation and food storage

Advances in Transportation & Food Storage

- Containerization of seaborne freight traffic
- Refrigeration of containers, as they wait transport in Dunedin, New Zealand

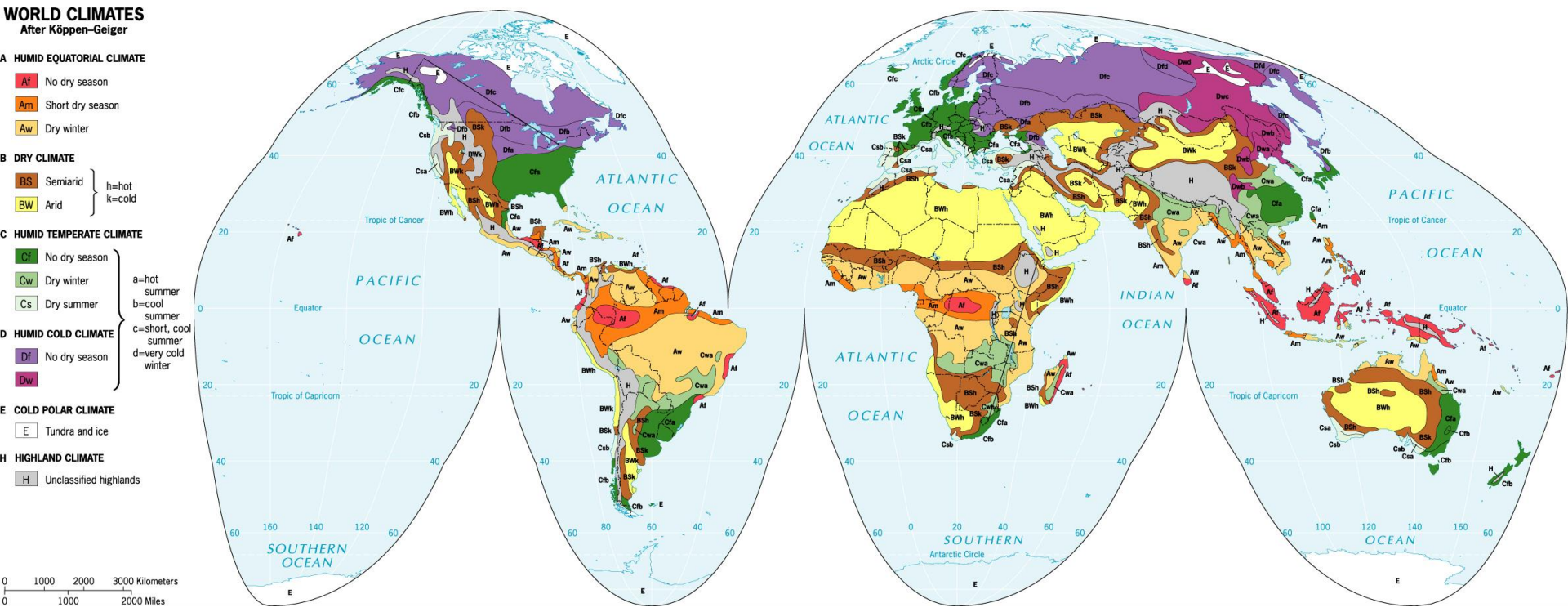
Agriculture and Climate

- **Climate Regions** (based on temperature and precipitation) help determine agriculture production.

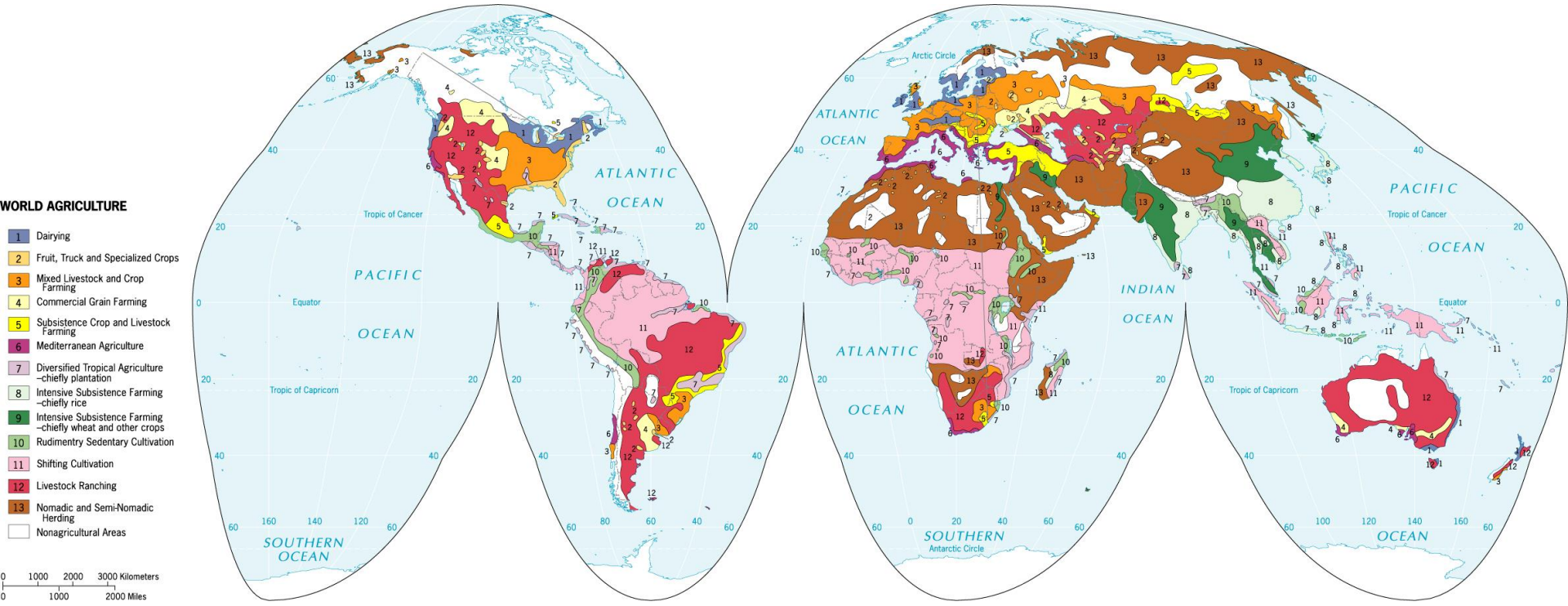
- **Agriculture Regions** – drier lands usually have livestock ranching and moister climates usually have grain production.

World Map of Climates

Koppen Climate Classification System



World Map of Agriculture



Cash Crop and Plantation Agriculture
Cotton and Rubber
Luxury Crops
Commercial Livestock, Fruit, and Grain Agriculture
Subsistence Agriculture
Mediterranean Agriculture
Illegal Drugs

Agribusiness & the Changing Geography of Agriculture

- **Commercialization of Crop Production**

  With the development of new agricultural technologies, the production of agriculture has changed.

  - eg. Poultry industry in the US

    production is now concentrated

    farming is turning into manufacturing

The Dutch Flower Market

Plantation Agriculture

- Governments in core countries set quotas for imports & subsidize domestic production
- Large scale cash cropping is called plantation agriculture-a hold over from the colonial period
- Bananas, sugar, coffee, cacao, rubber and tea are examples.
- Sugar cane is a cash crop that drives the economies of many Caribbean nations
- Cartels are formed to boost prices, but are seldom successful

Rubber

- Originally collected from a wild tree in Brazil and Africa, the seeds were planted to create plantations in Malaysia, Indonesia and other SE Asian countries.
- Today 70% of world rubber production is in SE Asia.
- Automobile production in the early 20th century boosted the demand for rubber. Of 17.7 tons used per year today about 10 million tons are synthetic-made from petroleum

- A truck (an old English word for trade or barter) farmer in the city of Jakarta, Indonesia raises vegetables within sight of great skyscrapers.
- Land is valuable and a growing population requires that every square inch of fertile land is used to produce food

Organic Agriculture

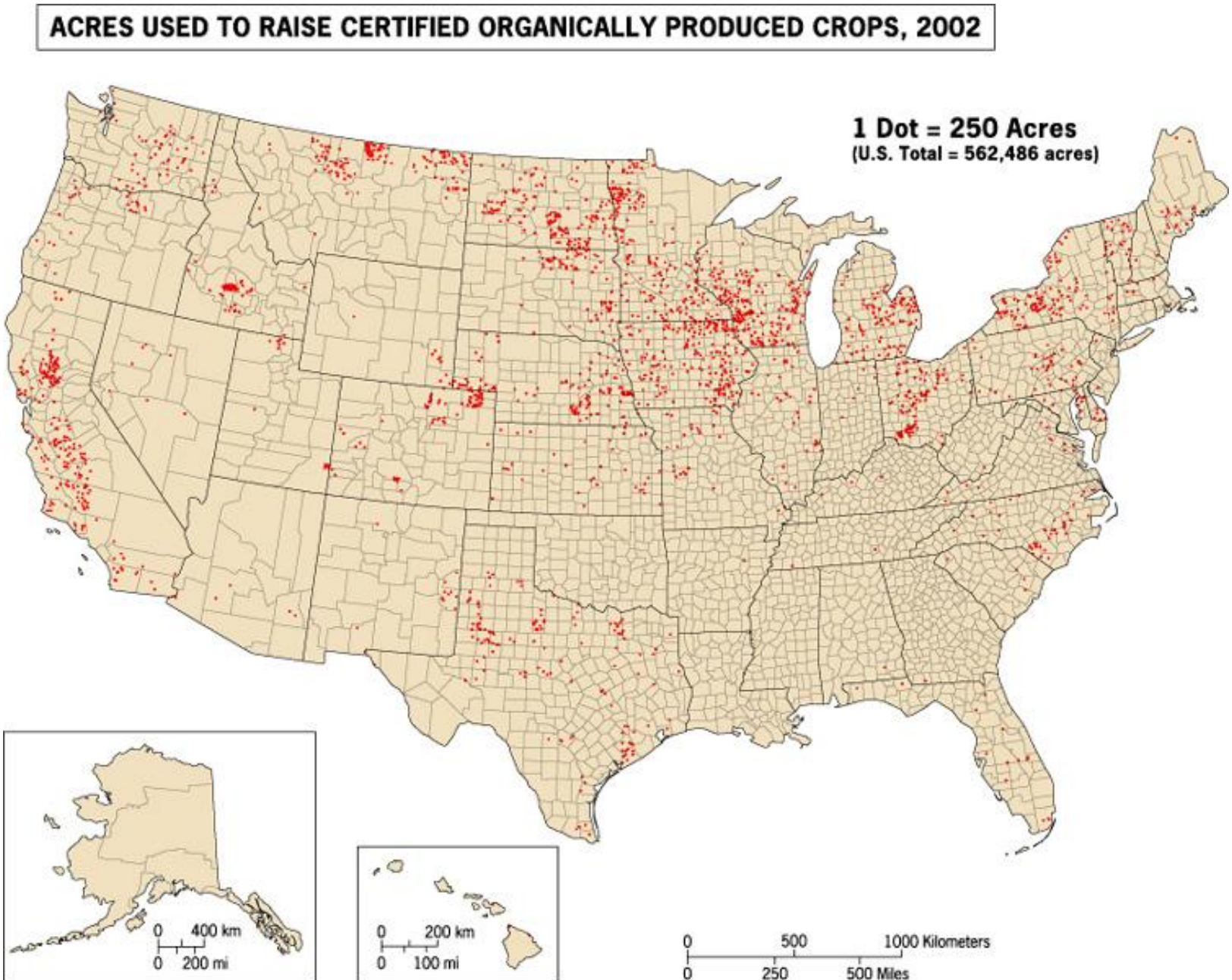
- **Organic Agriculture** –

  The production of crops without the use of synthetic or industrially produced pesticides and fertilizers or the raising of livestock without hormones, antibiotics, and synthetic feeds.

  - sales of organic foods on the rise
  - grown everywhere
  - demand in wealthier countries

Protest of GM Foods at the World Trade Organization meeting in Seattle, 1999

Organic Agriculture



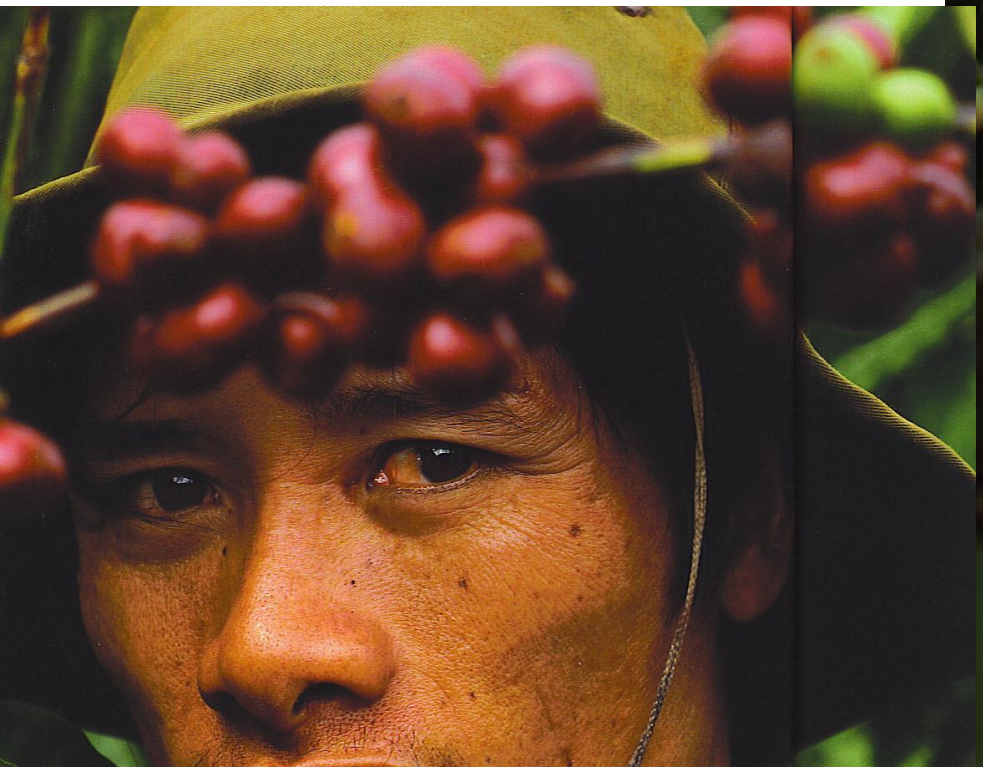
Fair Trade Agriculture

- **Fair Trade Coffee –**

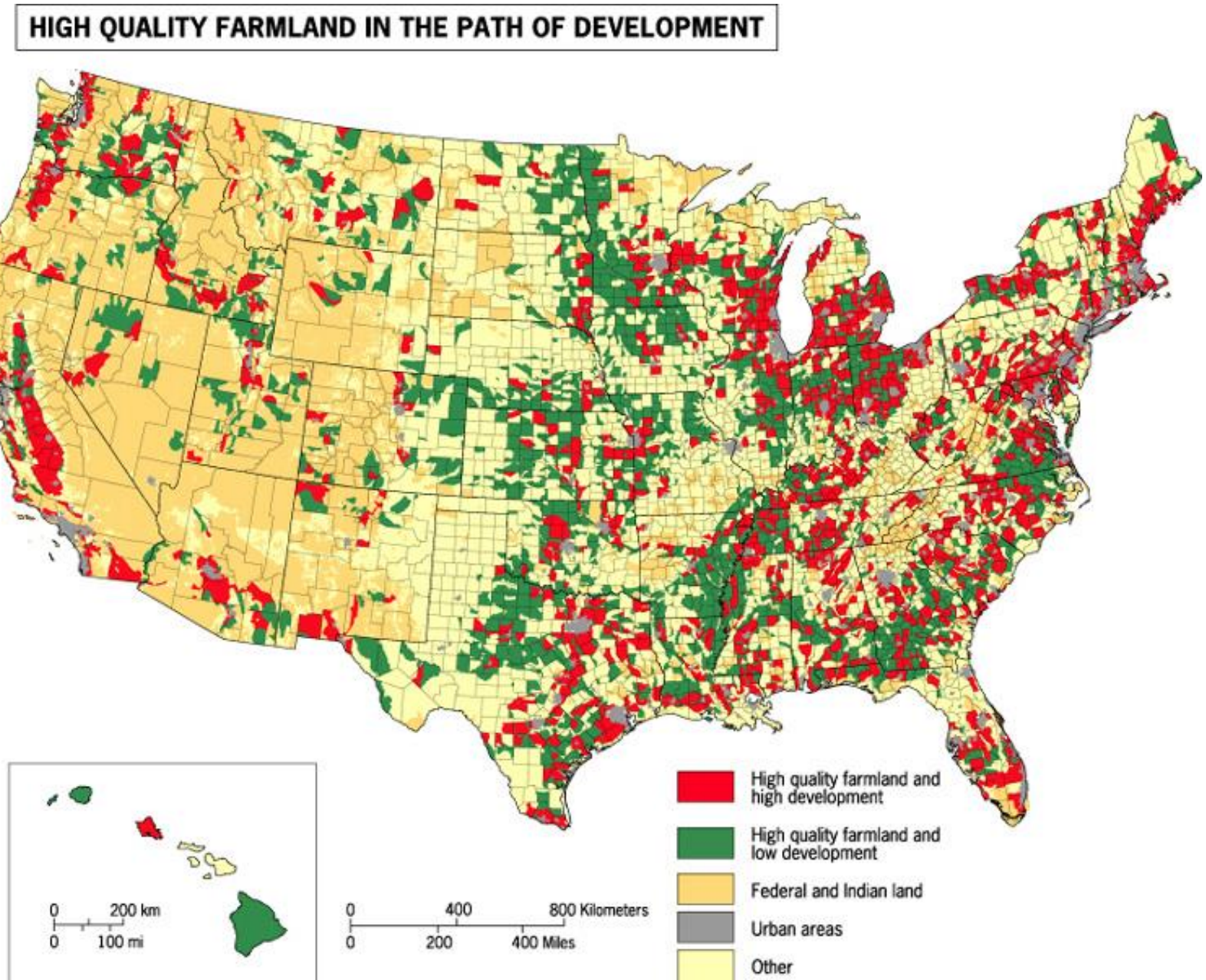
  shade grown coffee produced by certified fair trade farmers, who then sell the coffee directly to coffee importers.

  - guarantees a “fair trade price”
  - over 500,000 farmers
  - produced in more than 20 countries
  - often organically produced

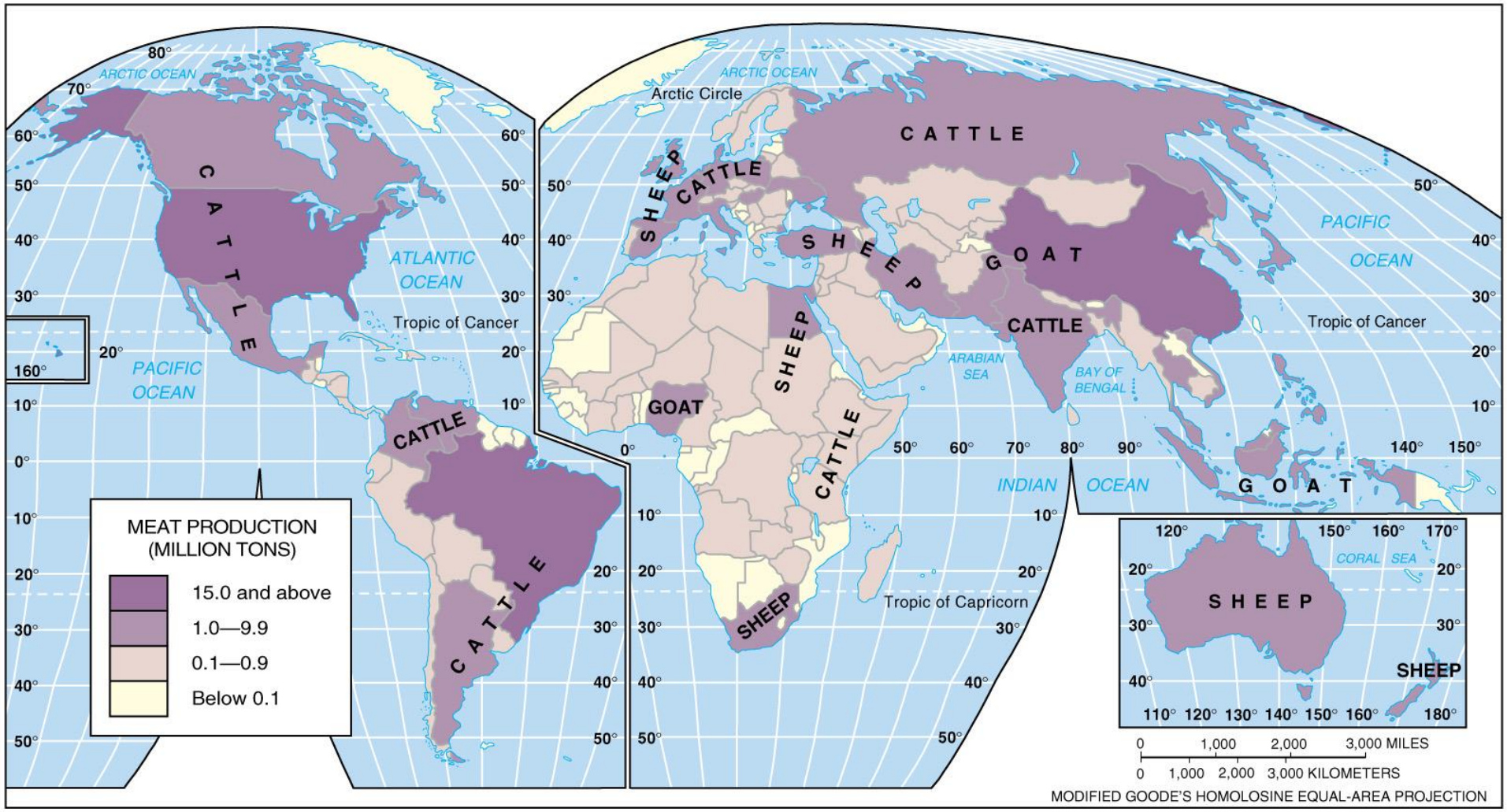
Fair trade coffee farmer in El Salvador grows his beans organically and in the shade, allowing him to get a much better price for his coffee.



Loss of Productive Farmland

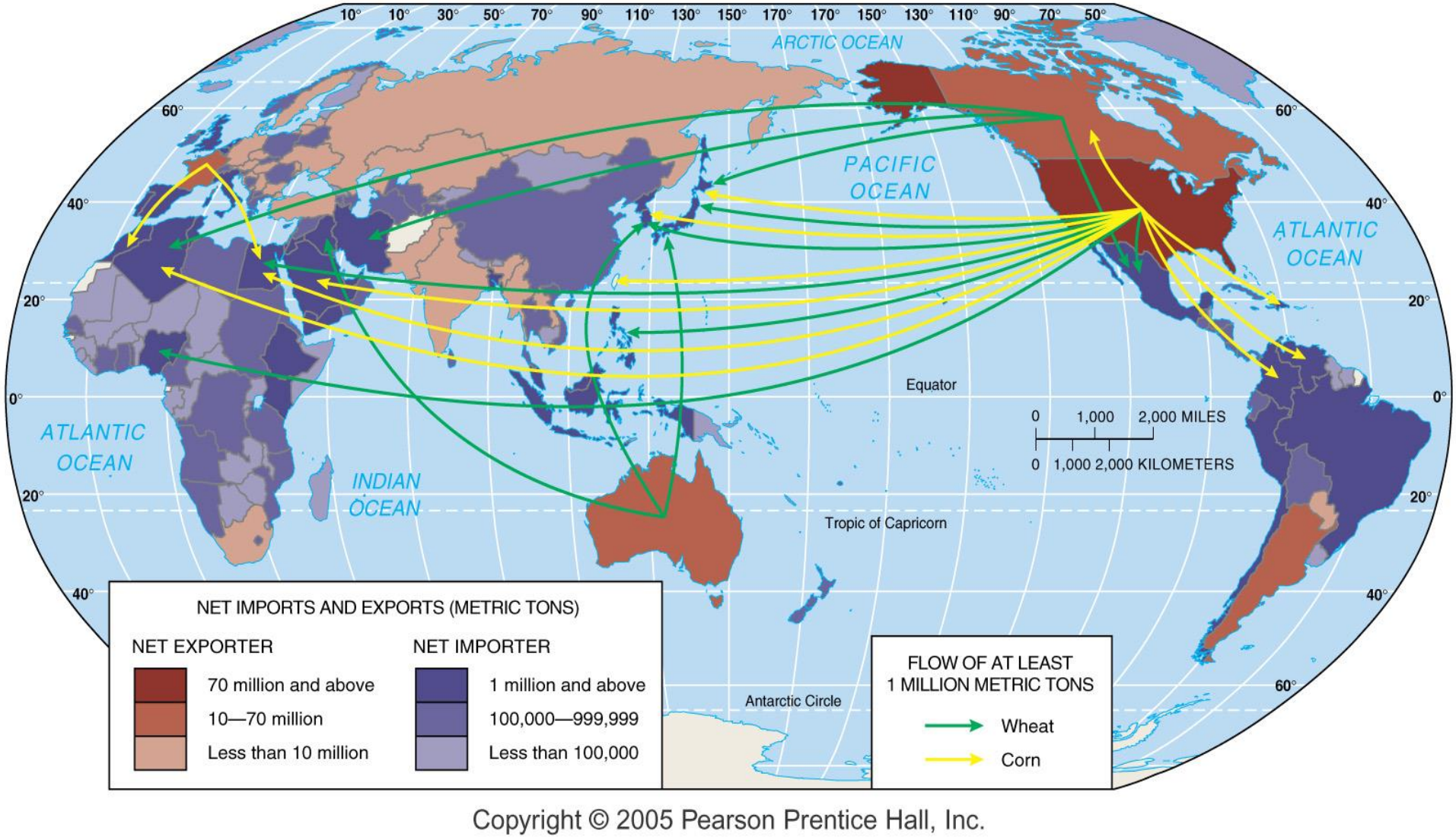


Meat Production on Ranches



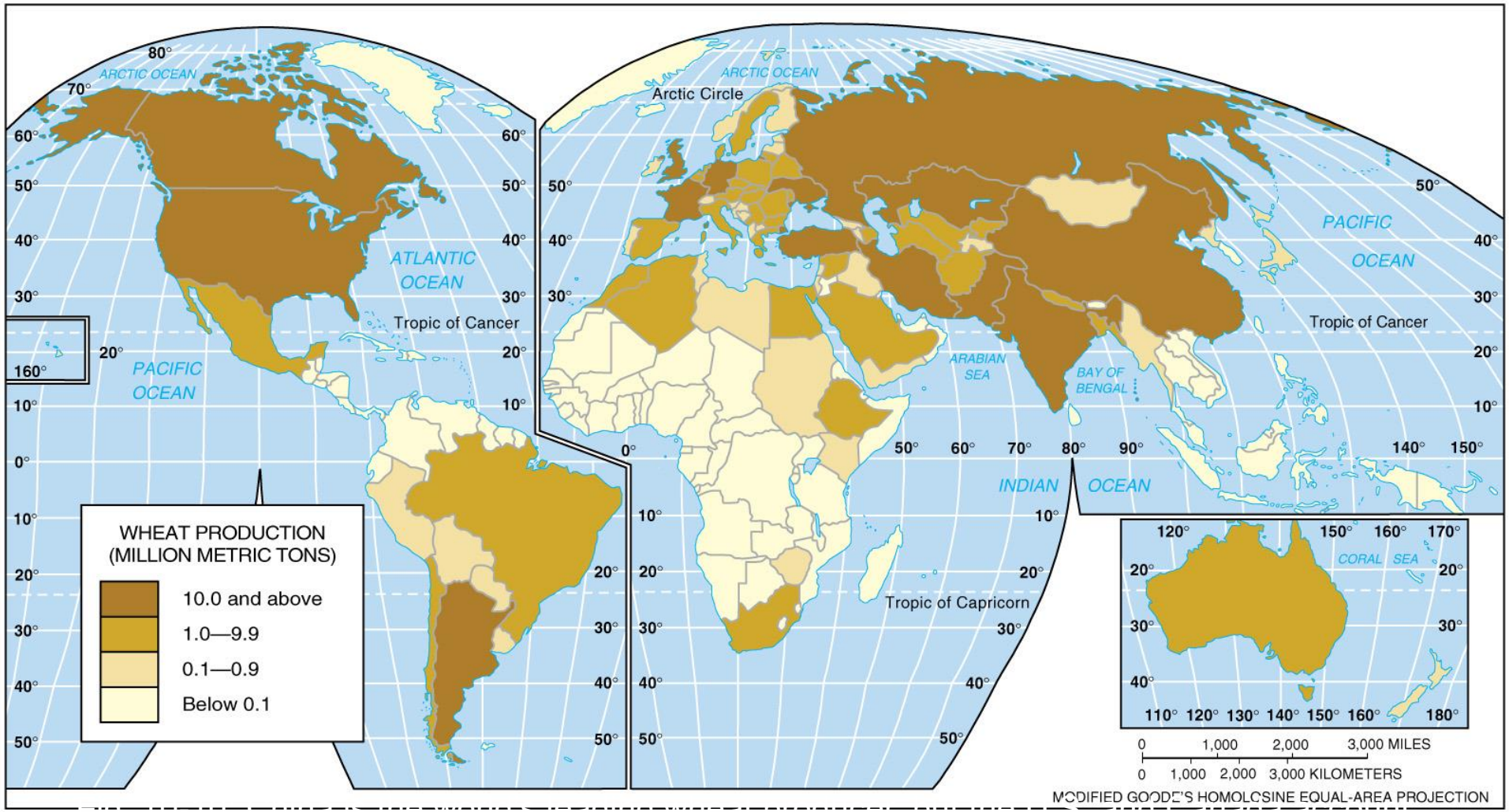
Cattle, sheep, and goats are the main meat animals raised on ranches

Grain Importers and Exporters



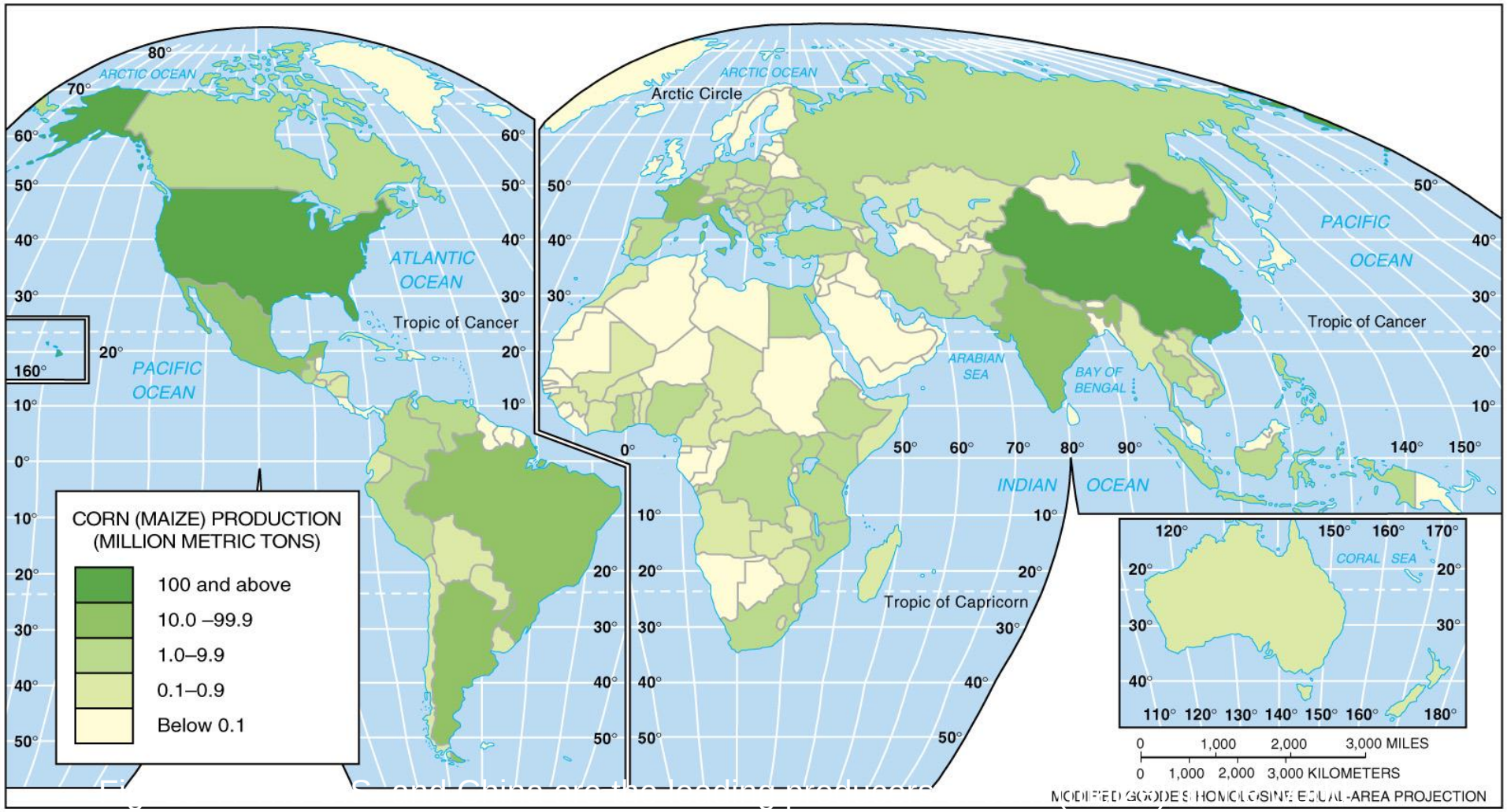
Most countries are net importers of grain. The U.S. is the largest net exporter.

World Wheat Production

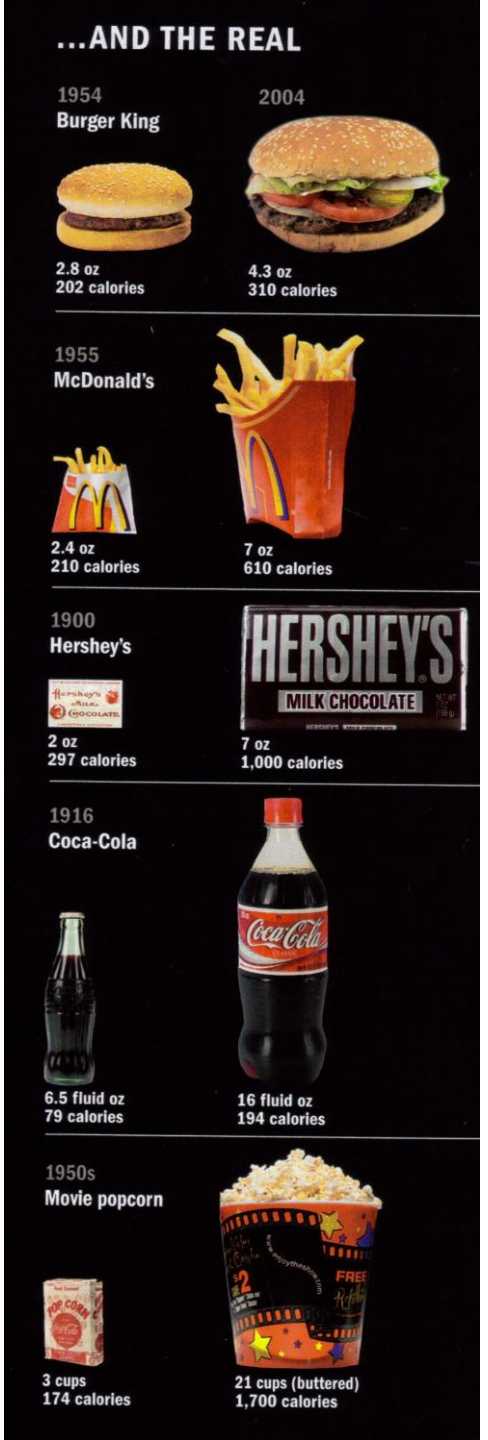


Wheat grown with pivot irrigation in the southern Negev Desert of Jordan

World Corn (Maize) Production



- **Corn** 1-2 ears per stalk, 800 kernels per ear
- 272 million bushels of corn used for industry each year
- 187 million bushels for breakfast cereals, snack chips & tortillas
- 131 million bushels used to make beer & whiskey
- 5 billion bushels used for livestock feed



Large farm machines cost $100,000 to over $250,000 to purchase-fuel costs and the costs of fertilizer, herbicides and insecticides make the over all cost of farming very high with low return for the investment.

American Commercial Agriculture is conducted at a large scale-
In 1950 1 US Farmer fed 27-today 1 US farmer feeds 135 people

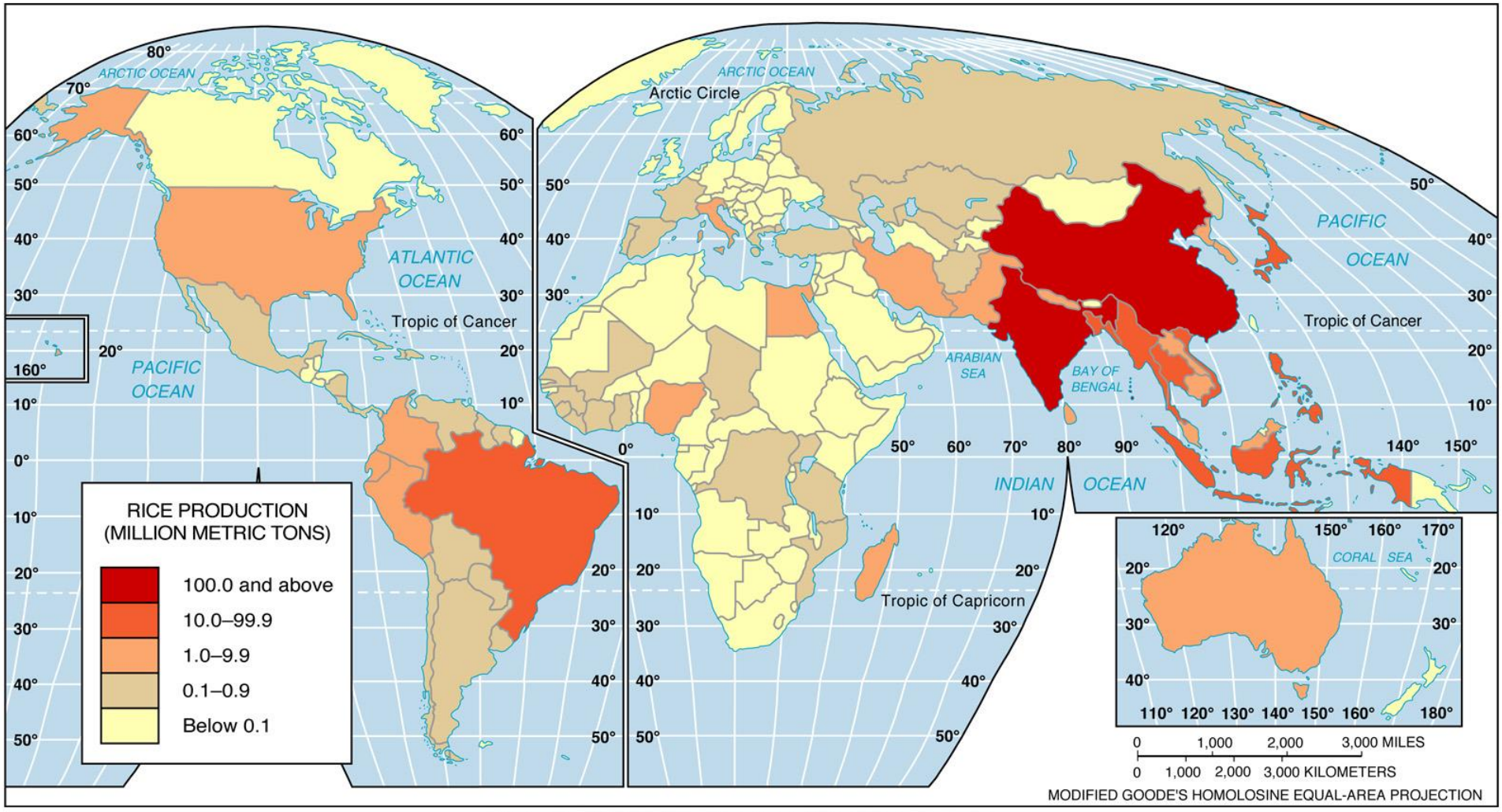

JOHN DEERE

Dairy Production

- Dairy farms must be located close to the consumer due to the high perishability.
- The ring of dairy suppliers around a city is known as the “milkshed.”
- Due to refrigerated trucks and rail cars the milkshed has dramatically increased to over 300 miles-in the early days of rail it was only 30 miles.

- Dairy farming is very labor intensive since cows must be milked twice a day

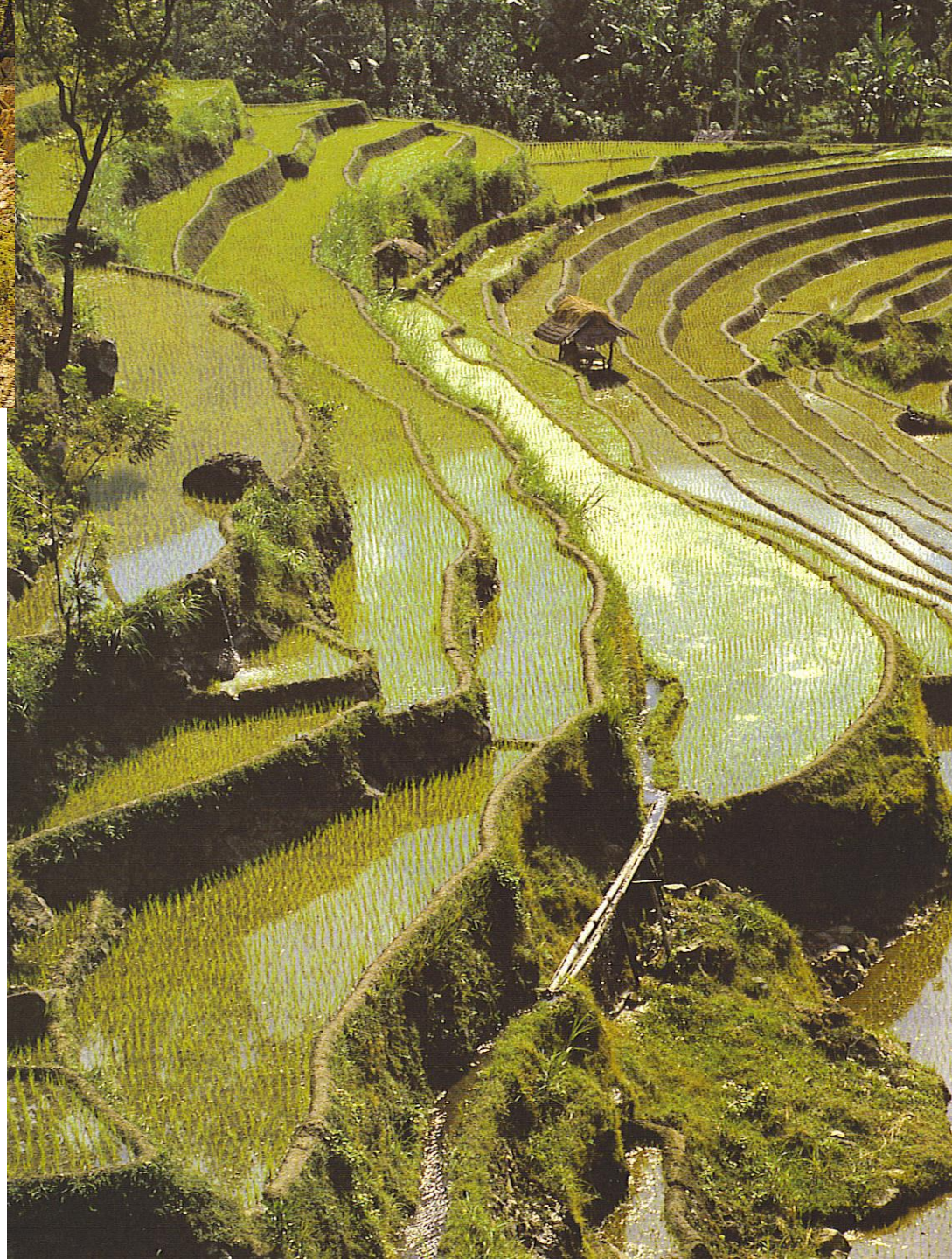
World Rice Production



Asian farmers grow over 90% of the world's rice. India and China alone account for over half of world rice production.

- Rice production is the most important crop in East, South & Southeast Asia.
- Asian farmers grow 90% of the world's rice and China & India account for half of the world's rice.
- Rice production is very labor intensive with rice seedlings that are transplanted into flooded paddies.

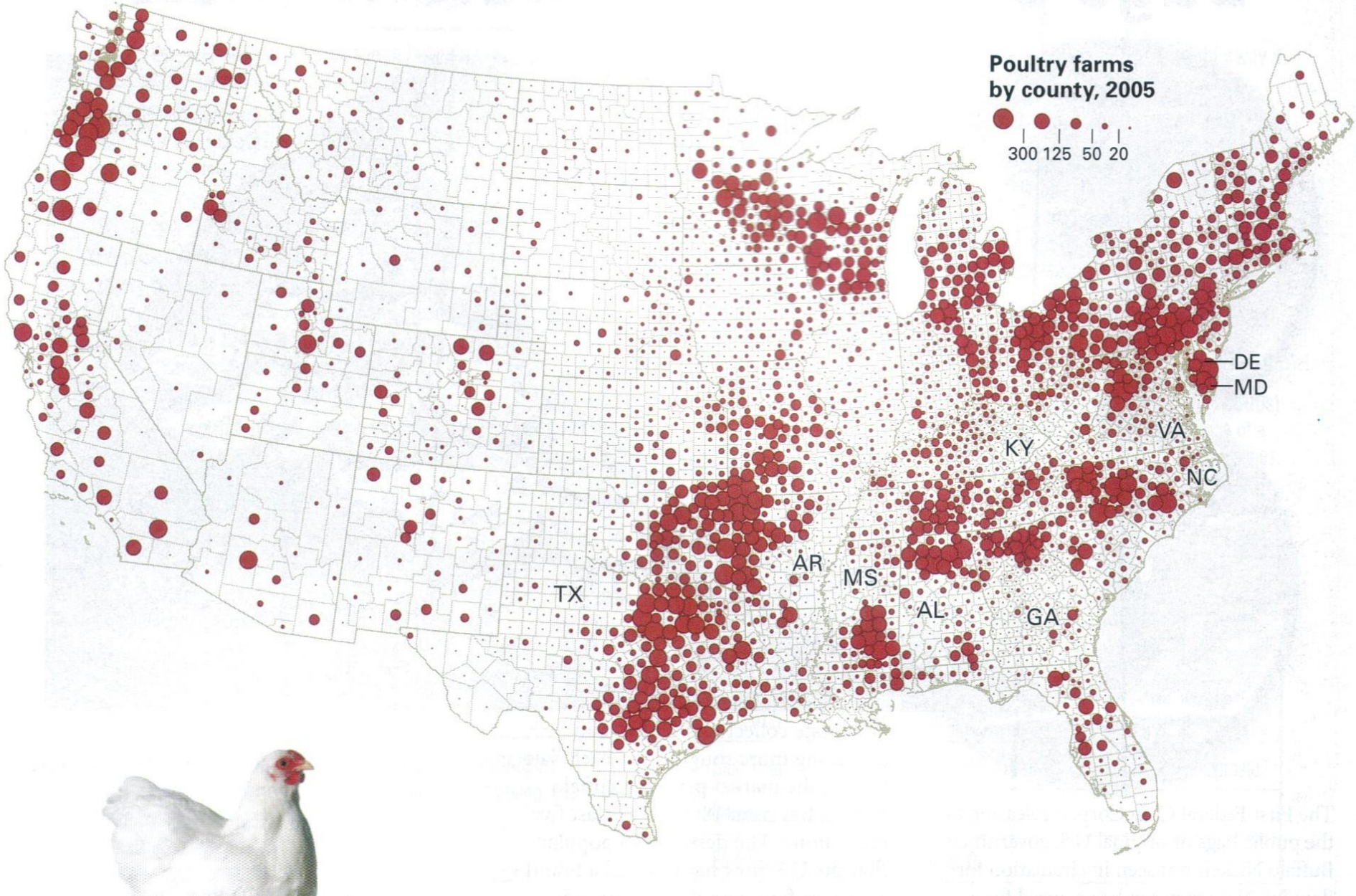
- Wet Rice production must be done in flat field that can be filled with water and then drained-at right rice field terraces on Bali in Indonesia-above mature rice drying in stooks in Japan

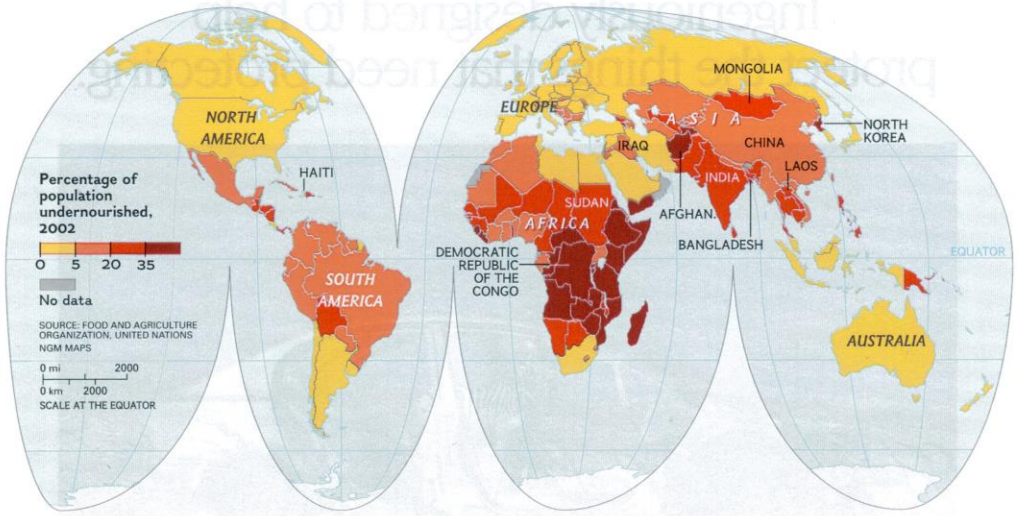


Poultry Production

- Broiler(young chickens) production has been dramatically transformed from a small scale to industrial scale production controlled by 10 companies like Tyson Foods & others.
- Factory like conditions are used to grow chickens, produce eggs & poultry for meat. Much of the industry moved to the southern states like Arkansas.

Organic chickens and free range eggs


Poultry farms
by county, 2005
300 125 50 20
DE
MD
VA
KY
NC
AR
MS
TX
AL
GA



COUNTRIES WITH THE MOST UNDERNOURISHED PEOPLE

- Democratic Republic of the Congo 35.5 million
- Bangladesh 42 million
- China 142 million
- India 221 million

The Hungry Planet

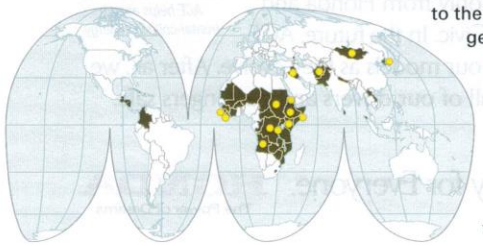
More than 850 million people around the world—one in nearly seven—don't have enough to eat. Although current global food production is sufficient to feed everyone, the number eating less than the minimum the human body needs—an average 2,100 calories a day for adults—now grows by more than ten million a year, mostly in the poorest nations. Countries with unstable food supplies teeter on the brink of famine; natural or man-made disasters push them over the edge.

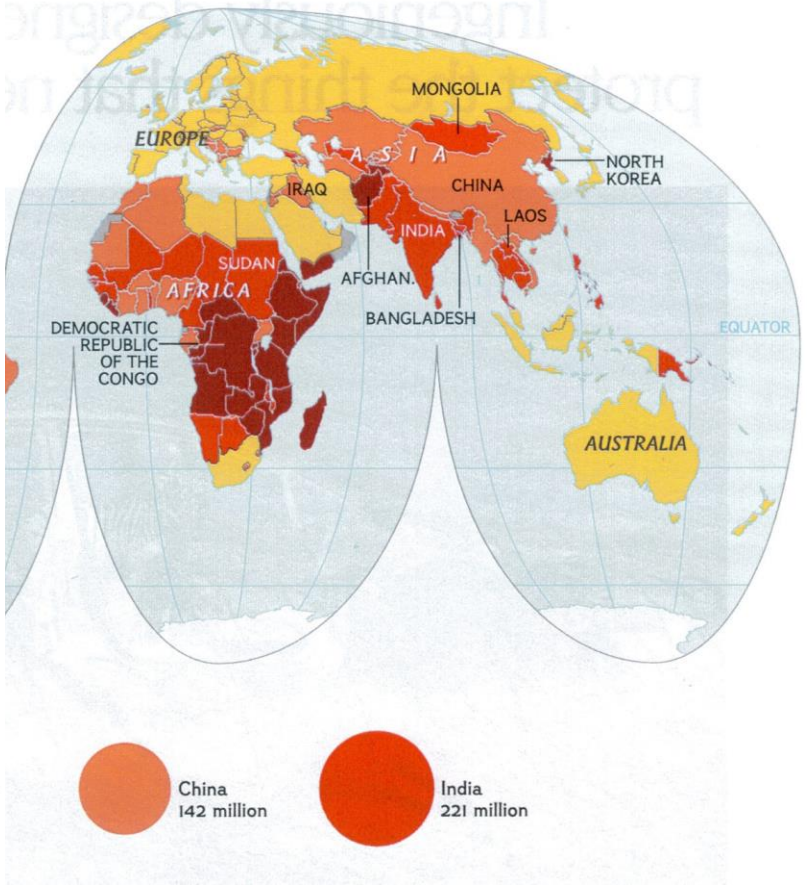
Drought causes more than half of all food shortages and damaged last year's harvests in Haiti, Mongolia, and Laos. Repeated dry spells have also hammered sub-Saharan Africa. Human conflict driving farmers from fields into refugee camps also adds to the problem. Since 1992 the percentage of food emergencies caused by warfare and civil unrest, such as in Afghanistan, Iraq, and Sudan, has more than doubled. Bad governance is another reason for hunger. North Korea's reluctance to request foreign assistance after floods in the 1990s caused widespread famine. "There are disasters in the making every year," says Jennifer Parmelee of the UN World Food Programme. "We're not winning this war. We need to find the long-term solution." *—Scott Elder*

FOOD EMERGENCIES DESIGNATED BY THE UN IN 2005

Urgent situations where events cause human suffering include natural disasters, such as tsunamis and earthquakes, or emergencies resulting from war.

- Duration more than ten years





THE END