

Whittlesey's Agricultural Regions of the World

Facts in brief

- One of the **earliest** and the most **satisfactory** attempts to formulate a **classification of world agriculture** was proposed by **Derwent Whittlesey** in **1936**.
- His paper entitled “**Major Agricultural Regions of the Earth**” was published in *Annals of the Association of American Geographers, Vol. 26, No. 4*.
- The classification scheme is exclusively based on **the inherent properties of the agriculture** practiced.
- Qualitative & Quantitative technique.
- Further a **comparative study** is made between regions framed.
- He recognized agricultural regions of the **first order of magnitude**.

Forces of Classification

The regional pattern is determined by two concurrent forces:

1. Natural Environment:

Climate, Soil, Slope

Drainage, Exposure, Altitude

2. Cultural Environment:

Density of Population

Stage of Technology

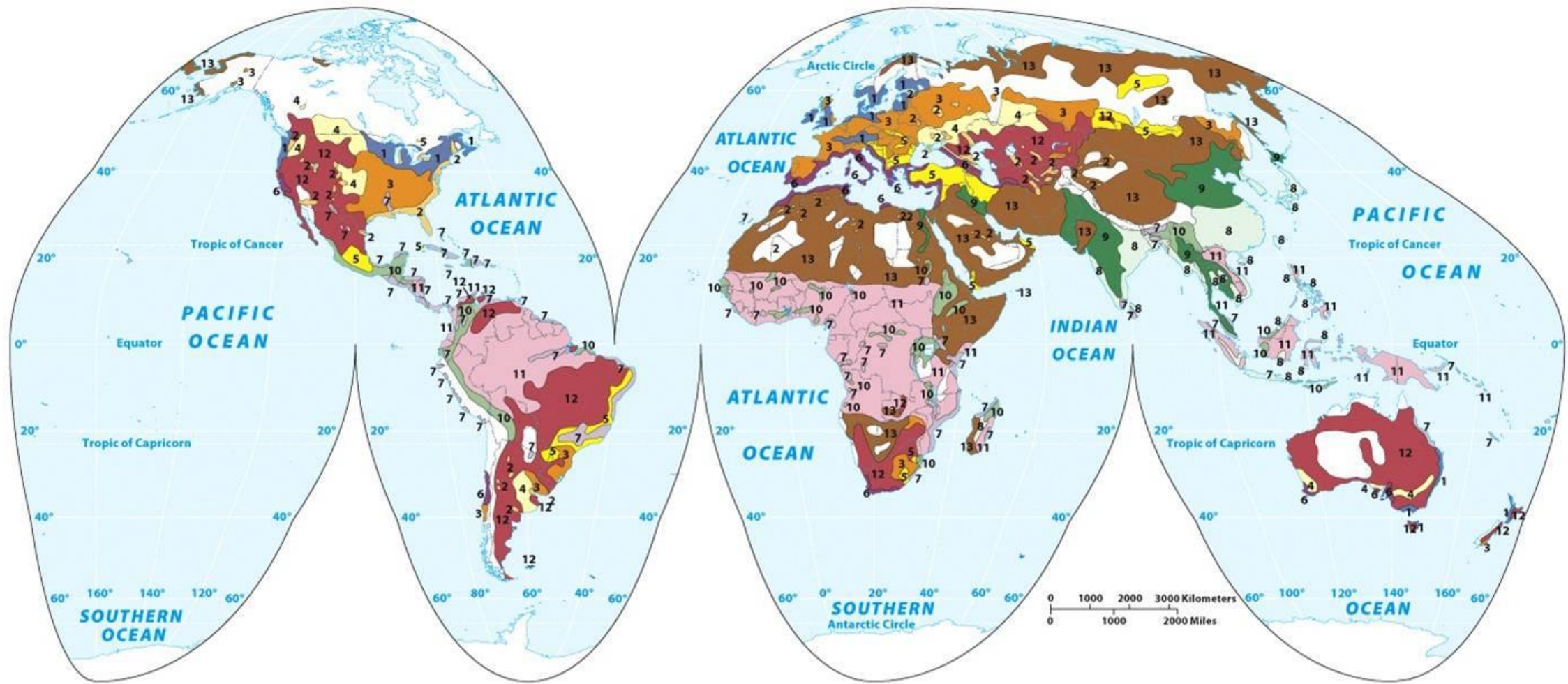
Inherited Tradition

Bases of Classification

The functioning forms (regions) which appear to dominate every type of agriculture may be listed under five heads:

1. The **crop and livestock association**
2. The **methods** used to grow crops and produce the stock
3. Intensity of **Capital, Labour, Organization.**
4. **Consumption patterns** of agricultural production (Do they eat what they produce?)
5. **Associations of buildings** and other structures associated with agriculture.

13 main types of agricultural regions with a further category of *Land virtually unused for farming* are recognized by Whittlesey.



WORLD AGRICULTURE

- | | | |
|---|--|--|
| 1 Dairying | 6 Mediterranean Agriculture | 11 Shifting Cultivation |
| 2 Fruit, Truck and Specialized Crops | 7 Diversified Tropical Agriculture - chiefly plantation | 12 Livestock Ranching |
| 3 Mixed Livestock and Crop Farming | 8 Intensive Subsistence Farming - chiefly rice | 13 Nomadic and Semi-Nomadic Herding |
| 4 Commercial Grain Farming | 9 Intensive Subsistence Farming - chiefly wheat and other crops | Nonagricultural Areas |
| 5 Subsistence Crop and Livestock Farming | 10 Rudimentary Sedentary Cultivation | |

1. Nomadic Herding यायावरी पशुचारण

- Vast spaces of earth, too dry to produce crops but not utterly barren deserts
- Aboriginal form of livestock business
- Two elements of environment in deciding their **duration of stay & direction of migration**:
 1. The amount and quality of water
 2. Forage
- Animals:

Cattel, Goat, Sheep, Horses, Camels, Reindeers
- Temporary settlements, widely scattered, seasonal migration.
- Monotheism is practiced.

Nomadic Herding

➤ Major regions:

1. Central Asia:

Mongolia, Tibet, Sikiyang, Kazakhstan, Uzbekistan & Steppes region

2. South-West Asia & Northern Africa:

Iraq, Iran, Jordan, Saudi Arabia, UAE, Turkey, Sudan, Sahara semi-arid region.

3. Tundra:

Norway, Sweden, Finland, Alaska

2. Livestock Ranching पशुधन-संवर्धन

- **Ranch:** A ranch is an area of land, including various structures, given primarily to the practice of ranching, the practice of raising grazing livestock such as cattle or sheep for meat or wool.
- Extensive **dry Temperate Grassland** regions and **Tropical** regions
- **Australia, New Zealand, South Africa, South America, North-western North America**
- **Commercial** form of **nomadic herding** (व्यापारिक यायावरी पशुचारण)
- **Semi-sedentary** type (अर्द्ध-स्थानबद्ध)
- Great care is taken to **improve breed** and the rancher is a **large-scale business** operator
- *All the leading ranching regions are in the new continents* (Stage of technological development)
- **Encroaching** (अतिक्रमण) nomadic herding regions

Grasslands of the World



3. Shifting Cultivation स्थानान्तरण खेती

- **Subsistence (जीवन निर्वाहक)** and most **rudimentary (अल्पविकसित)** type of agricultural practice
- Land is cultivated temporarily (2-3 years) and left **fallow (पड़त)** for longer duration (5-12 years)
- **Regions: Humid low latitudes (आर्द्र निम्न अक्षांश)**, mainly **rain forest areas (वर्षा वन)**
Africa; South America;
- **Crude (अपरिष्कृत)** of methods of cultivation: '*Slash & Burn*'
- Use of *primitive tools*
- Forest dwellers live in *small tribes* by clearing the virgin forest
- It extends beyond rain forest areas to park-savanna, to ocean deltas, to mountain basins (14,000 feet elevation)

Shifting Cultivation स्थानान्तरण खेती ...

➤ Practices around the world:

- Indonesia – *Ladang* लदांग
- Philippines – *Caingin* कनजिन
- Mexico and South America – *Milpa* मिलपा
- Venezuela – *Conuco* कोनुको
- Brazil – *Roca* रोका
- Central Africa & Congo – *Masole* मासोल

➤ India

- North-East – *Jhum* or *Jum* झूम /जुम
- Odisha – *Dabi, Coma, Brring* डाबी, कोमा, बृंग
- Western Ghats – *Kumari* कुमारी
- South-eastern Rajasthan – *Walra* वालरा
- Chhattisgarh (*Bastar*) – *Penda, Bewar, Dahiya, Deppa, Kumari* पेंडा, बेवर, दहिया, देपा, कुमारी

4. Rudimentary Sedentary Cultivation आद्यरूप स्थानबद्ध कृषि

- **Permanent settlements (स्थायी निवास)** of farmers (Sedentary)
- **Crude** tools and intensive method of cultivation
- **Little knowledge** to make soils more fertile
- **More than one crop** in a year
- **Mixed cropping pattern (मिश्रित कृषि प्रारूप)** is observable
- Crops are mainly used for local consumption

Rudimentary Sedentary Cultivation...

- Animals are also domesticated (mainly as farm animals)
- **Densely populated regions (सघन बसे क्षेत्र)** (Soil and Climate are favorable above average)
- *The intrusion of outsiders in historical times has tended to turn shifting cultivation to sedentary forms (Europeans intrusion has accelerated this tendency)*
- **Mainly Cash crops (नकदी फसल) are grown:** Cotton, Rubber, Cacao, Oil palm, coco palm, etc.
- A shift has been noted towards more efficient use of land in regions of shifting and rudimentary cultivation.
- **Regions:** South America; South-East Asia; Western Africa

Intensive Agriculture सघन कृषि

Characteristics:

- **Small-sized** farm
- **Labour intensive** cultivation
- Less involvement of animals
- **Variety of crops** are grown
- Use of **HYV** seeds and **fertilizers**
- Practiced in regions having **high population pressure on agricultural land**
- Regions:

China	India	Japan
Bangladesh	Sri Lanka	Indonesia
Malaysia	Philippines	Vietnam
Thailand	Laos	Cambodia

Intensive Subsistence Agriculture सघन निर्वाहक कृषि

- I. Intensive Subsistence with Rice dominated**
- II. Intensive Subsistence without Paddy**

5. Intensive Subsistence with Rice dominated

- **Humid** regions of **South** and **East Asia** (**Monsoon Asia**)
- Crop association is dominated by **RICE**
- Rice yield more grain per acre than any other crop
- Cropping Pattern:
 1. **Three crop**: Irrigable deltas, Floodplains, Coastal Plains, Terraced areas.
 2. **Two crop**: Where climate is hot
 3. **One crop**: Water scarcity, Cool season
- Other crops in association are: grains, oil-seeds, cotton, vegetables
- Fish cultivation is also practiced
- Method of Cultivation: almost all work is performed by **hands**, hand-tools, **rotation of crop** is a common practice
- In spite of the fact **per capita production is low**, thus people have **low income**.

➤ *Conditions for Rice cultivation:*

- Rice is grown under varying conditions **in India** from **8° to 25° N** latitude
- Usually from **mean sea level to about 2,500 metre altitude**
- It is a **tropical plant** and requires **high heat** and **high humidity** for its successful growth.
- The **temperature** should be fairly high at **mean monthly** of **24°C**.
 - ✓ Sowing: 20°- 22°C
 - ✓ Growing: 23°-25°C
 - ✓ Harvesting: 25°-30°C
- The **average annual rainfall** required by rice is **150 cm**

➤ Regions:

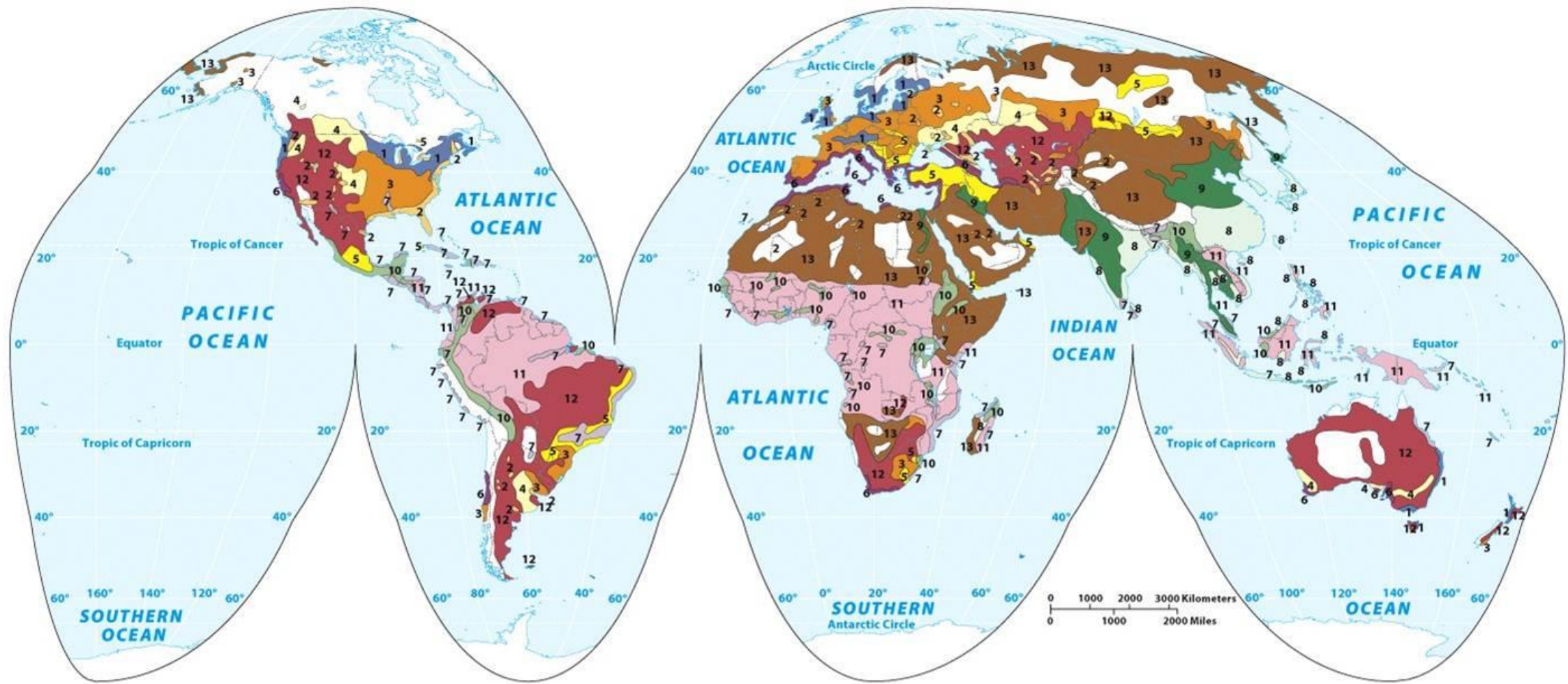
- **South-Eastern China**
- **Japan**
- **India:** West Bengal, Bihar, U.P., Kerala, coastal
Andhra Pradesh, Tamil Nadu
Punjab, Haryana (*Irrigation*)
- **Philippines**
- **Indonesia**

6. Intensive Subsistence without Paddy

- Neighboring Rice regions
- **Difference?**
 - ✓ **Climate:** Lack of moisture, comparatively drier, short-growing season
 - ✓ Farming regions are generally **inland**
 - ✓ **Irrigation** supports cultivation but comparatively on a small scale
 - ✓ Crops are same (apart from rice)
 - ✓ **Wheat** is the dominating crop
 - ✓ **Densely populated** regions but less dense in comparison with Paddy dominating regions
 - ✓ Suffers from frequent **famines, drought**, and sometimes **flood** due to **erratic rainfall**.
- **Similarity in method of cultivation**

➤ **Regions:**

- **Eastern China**
- **India: Punjab, Haryana, Western U.P., Gujarat, Maharashtra, Karnataka**
- **Pakistan**
- **Inland regions of Myanmar, Thailand, Vietnam**
- **Egypt (Nile river valley), Euphrates and Tigris river plains**



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7. Commercial Plantation Crop Tillage

व्यापारिक बागाती कृषि

- Commercialization of Intensive subsistence tillage and Rudimentary sedentary tillage by **Europeans and Americans** in limited areas. (Their colonies)
- **Plantation:**
 - Production in tropical regions **consumption in middle latitudes**
 - यह कृषि उष्ण कटिबंधीय क्षेत्रों में मुख्यतः नकदी फसलों का उत्पादन करने हेतु प्रचलित है।
 - Every bit of produce is sold (Degree of Commercialization)
उत्पादन का अधिकांश भाग निर्यात किया जाता है।
 - **Capital, Technicians, Management (Outsiders) & Labor (Local)**
 - **Plantation crops** (Cash-crops): Tea, Coffee, Sugarcane, Oil-palm, Cocoa, Tobacco, Rubber, Cotton, Groundnut, Jute
मुख्य उपज: रबड़, ताड़-तेल, कपास, गरी, चाय, कहवा, केला, गन्ना, जूट आदि हैं।

7. Commercial Plantation Crop Tillage...

व्यापारिक बागाती कृषि ...

- प्लान्टेशन पर फार्मिंग विशेष कौशल द्वारा और जहाँ संभव होता है वहाँ मशीनों व उर्वरकों, कीटनाशक दवाओं व रोगनाशक रसायनों का प्रयोग कर की जाती है।
- बागाती फसलों की समस्त प्रक्रिया फार्मों पर ही पूर्ण कर निर्यात हेतु उपलब्ध की जाती है ।
- **Farm size is large**
- Farms are **connected** with major railways and roadways to export produce
- Crops have **international market**
- **Infrastructural development for laborers and their families livelihood**

- Regions: Narrow Coastal belts of Tropical and Sub-tropical regions; High lands (India)
 - ✓ **Asia:** North-eastern states in India, Indonesia,
 - ✓ **Africa:** South Africa, Guinea Coast, Mozambique
 - ✓ **South America:** Brazil, Columbia, Peru
 - ✓ **Middle America:** Mexico, West Indies
 - ✓ **Australia:** Queensland Province, Papua New Guinea

- **Commercial plantation crop tillage occupies in aggregate a very small acreage, compared to any of the other types of agricultural land occupance.**

Summary so far...

- In contrast with the two dryland types of agricultural occupance the remaining **systems of humid low latitudes depend largely on tillage.**
- **Livestock is excluded:** Wholly with minor exceptions.
- **Subsistence is the primary objective** of the farmer (Commercial Plantation is a n exception)
- The systems discussed so far covers a **large part of the earth tilled and grazed areas.**
- **Supports nearly 70% of the world's population.**
- The next remaining agricultural systems include principal commercial systems fo agriculture in the world.

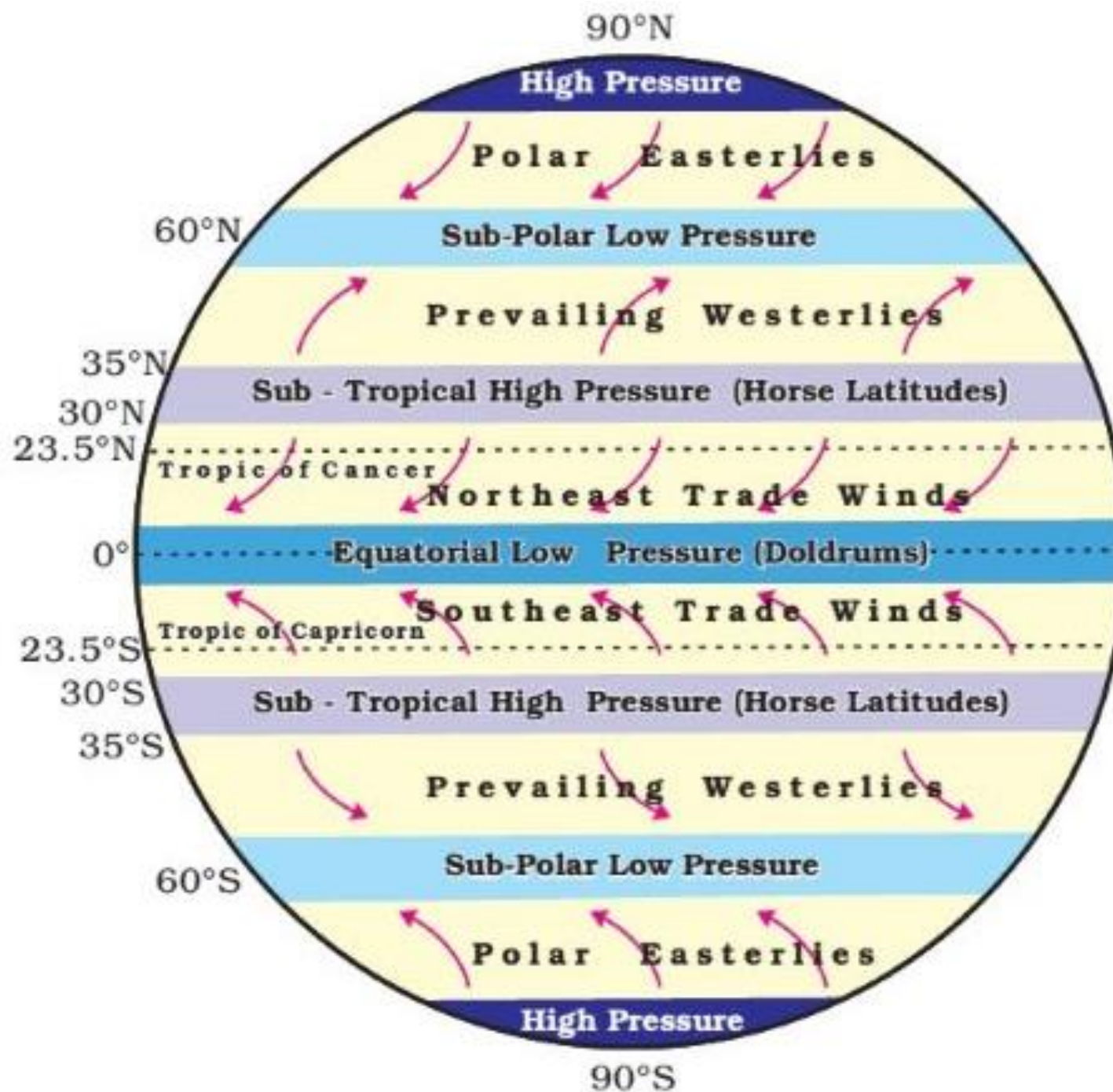
8. Mediterranean Agriculture

भूमध्यसागरीय कृषि

The term 'Mediterranean agriculture' applies to the agriculture done in those regions which are having Mediterranean type of climate

Climate:

- ✓ **Summers:** Long, **dry** & hot
- ✓ **Winters:** (Mild) Warm and **wet**
- ✓ **Temperatures:** Winters: 3°C to 13°C
Summers: 22°C
- ✓ **Rainfall:** Fairly dry climate with 50 cm annual rainfall **only occurring in winter season.**

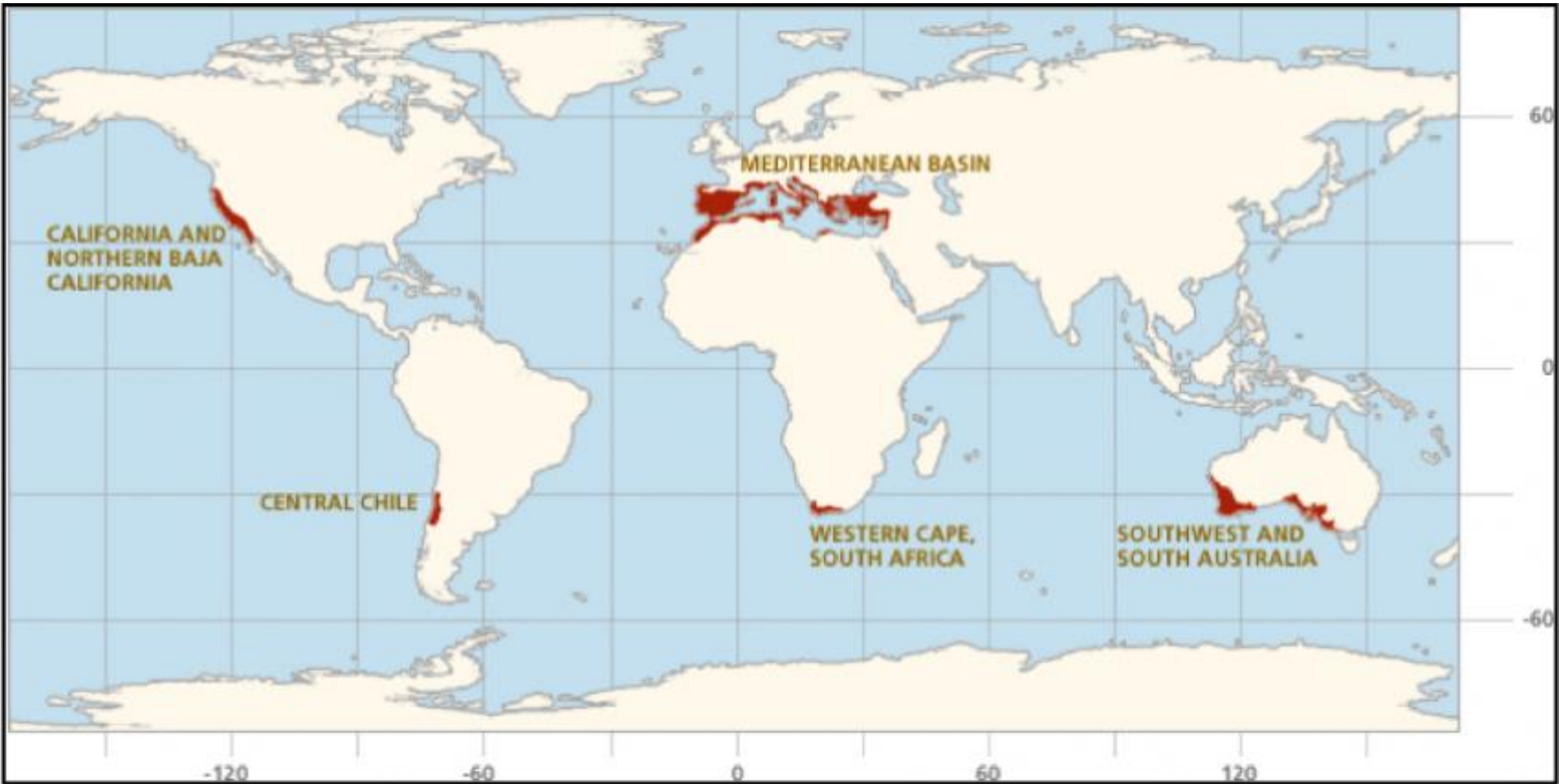


Mediterranean Agriculture

Location:

- *Western parts of the continents*
महाद्वीपों के पश्चिमी भागों पर
- 30° - 45° Latitudes in both hemispheres
- 1. **The Mediterranean Basin:** France, Spain, Italy, Algeria, Morocco, Turkey, Tunisia, Israel, Northern Nile valley, i.e., all the regions around Mediterranean Sea
- 2. **California** in USA
- 3. **Central Chile**
- 4. **Southern part of South Africa (Cape area)**
- 5. **Lower Murray – Darling basin of South Australia**





Mediterranean Agriculture...

Characteristics:

- ✓ A specialized kind of **commercial व्यापारिक** agriculture
- ✓ **Subsistence निर्वाहक** agriculture (wheat, barley and vegetables) occurs side by side with commercial farming (**horticulture** & **viticulture**).
- ✓ **Nucleated** settlement **एकाकी बस्ती** is a rule
- The **four main aspects पक्ष** of Mediterranean agriculture are:
 1. **Orchard (बगीचे) farming: “Orchard lands of the world”**
 2. **Viticulture अंगूर की खेती (2/3rd wine production of world)**
 3. **Cereal अनाज and vegetable सब्जियां cultivation**
 4. **Limited animal husbandry सीमित पशु पालन** (hot summers, lack of water & grazing lands)

Mediterranean Agriculture...

1. Orchard farming:

- ✓ It represents a **highly specialized commercial agriculture** here.
- ✓ The world supply of citrus fruits, olives and figs comes almost exclusively from Mediterranean lands.
- ✓ **Citrus fruits** खट्टे फल (oranges, lemons, grapefruits) (नीम्बू, संतरे, अनार), **olives** जैतून and **figs** अंजीर. Olives and figs are indigenous to the Mediterranean region
- ✓ **Fruits** are sometimes raised on **unirrigated ground** असिंचित भागों and draw their moisture supply from deep in the soil.
- ✓ **Irrigation** is, however, **practiced** in many areas, especially **California, Israel and parts of France, Spain and Italy.**

Mediterranean Agriculture...

2. Viticulture: अंगूर की खेती

- ✓ **Viticulture** or **grape cultivation** is a specialty of the Mediterranean region.
- ✓ It represents a **very intensive सघन form of farming** requiring not only good conditions of moisture, temperature and soil but also much personal care.
- ✓ Grapes raised in different parts of the Mediterranean lands have **distinctive flavors विशिष्ट स्वाद** and **wines made in the various areas maintain their exclusive names.**
- ✓ The great variation in relief, climate, soil and methods of preparation has produced many famous wines.

Mediterranean Agriculture...

2. Viticulture...

- ✓ Few examples are given below -
 - *Sherry* from the Andalusia district of southern **Spain**
 - *Port wine* from the Douro basin of western **Portugal**
 - *Marsala* from the Isle of **Sicily**
 - *Anti* from the Chianti Hills of **Tuscany**
 - *Asti* from the Piedmont district of northern **Italy**
- ✓ In **France** wine-making is a national industry **राष्ट्रीय उद्योग**.
 - *Champagne* comes from the **Paris** basin
 - *Burgundy* from the limestone scarp-lands of the **Cote d’Azure**
 - *Claret, Brandy* (Cognac) *Bar sac* and *Bordeaux* from different parts of **western France**, especially the basin of Aquitaine
- ✓ Wines are also produced in the Mediterranean lands of Australia, South Africa and South America, though these are not as famous.

Mediterranean Agriculture...

3. Cereal and vegetable cultivation:

- In acreage, cereal crops are the most important in Mediterranean agriculture
- In most Mediterranean countries cereals often occupy about **half the total cultivated acreage** and provide enough grain for **home consumption**.
- **Wheat गेहूँ**, especially hard winter wheat, is the **principal food grain मुख्य खाद्यान फसल**
- **Barley जौ** is grown in the **poorer areas**
- The **warm and sunny Mediterranean climate** also allows a **wide range of other food crops and green vegetables** to be harvested.
- **Beans, lentils, onions, tomatoes, carrots, sugar beet फलियाँ, दालें, प्याज, टमाटर, गाजर, चुकंदर** and all the leafy vegetables of the warm temperate latitudes are grown.

Mediterranean Agriculture...

4. Limited animal husbandry:

- Mediterranean agriculture is also characterized by **limited animal husbandry**, which survives on grasslands घास के मैदान available here.
- In areas like Lombardy plain, Ebro basin, San Joaquin valley of **California**, **dairy farming** दुग्ध उत्पादन is important.
- In **mountain areas** the practice of 'transhumance' मौसमी प्रवास :
 - ✓ **moving the cattle up** to mountain pastures in the *summer* and,
 - ✓ returning them to the **valleys** in *winter*,is a common thing.

9. Commercial Grain Farming

- Commercial grain farming is an **extensive** and **highly mechanized** form of agriculture.
- Bulk of the grain harvest is exported. “**Commercial grain farming is the creature of industrial revolution**”.
- **Crop cultivation dominates**. Livestock is secondary and only for local consumption
- Exercised on **previous lands of nomadic herders or livestock ranchers**.
- Commercial grain farming has successfully developed in **economically developed temperate grasslands**:

Prairies, Pampas, Velds, Downs, Steppes

- **Population density is low** (50-200 persons/ sq km)
- **Availability of land is high**
- **Only a small fraction of the population is dependent on agricultural activities.**

Use of Machines in fields



Location:

The areas lie **between Humid and Semi-arid** climate. The region reflects a *continental (inland) position*

➤ **North America:**

- i) The largest area runs from *Alberta, Saskatchewan, Manitoba* to *Dakotas*
- ii) Another centre is in *Kansas*, eastern *Washington, Oregon*, eastern *Illinois* and northern *Iowa*

➤ **South America:**

Pampas Grassland region of *Argentina*

➤ **Eurasia:**

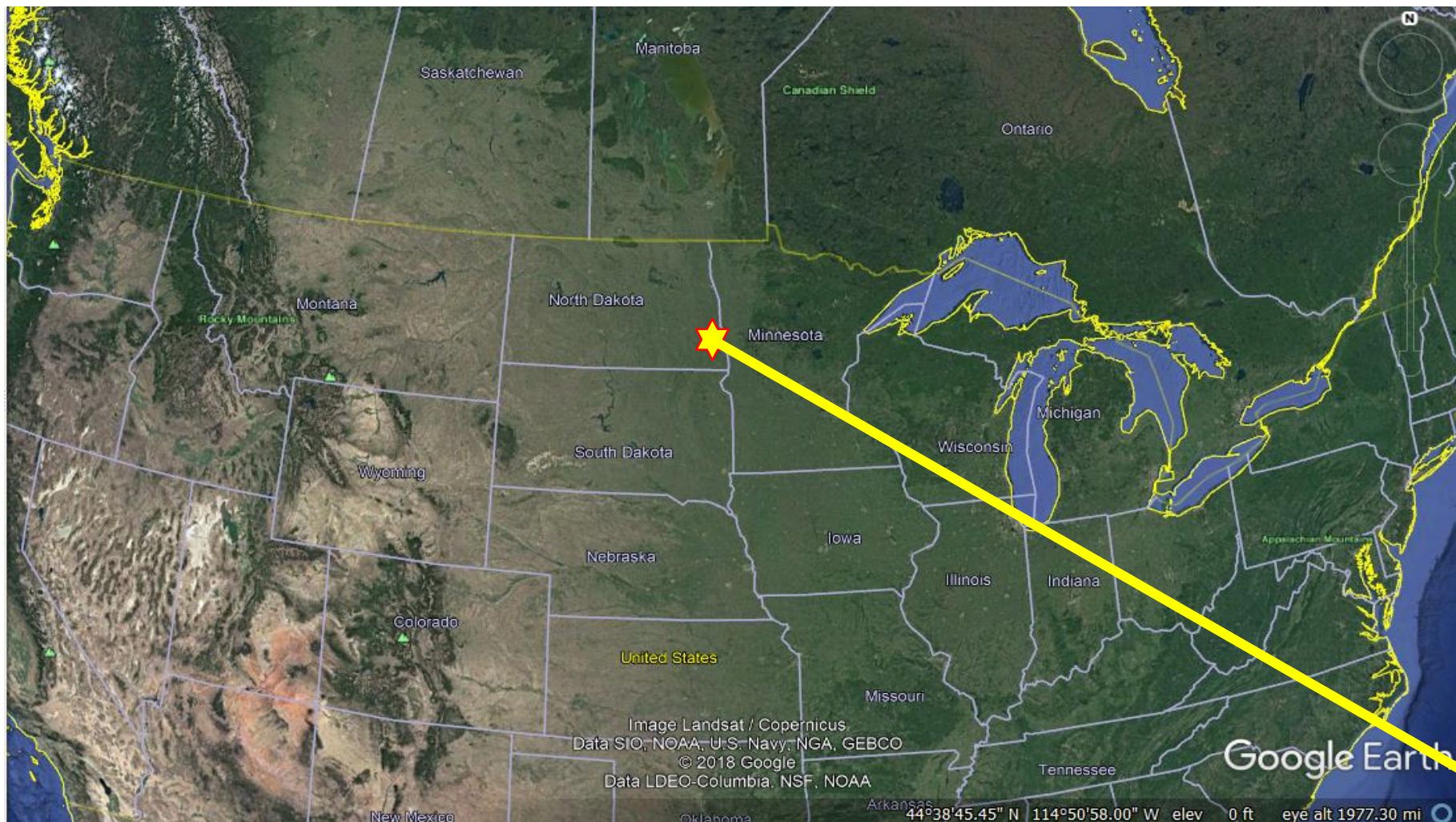
Ukraine, Central Siberia (Steppes), *Central Asia* (Semi-arid region)

➤ **Australia:**

South-west region

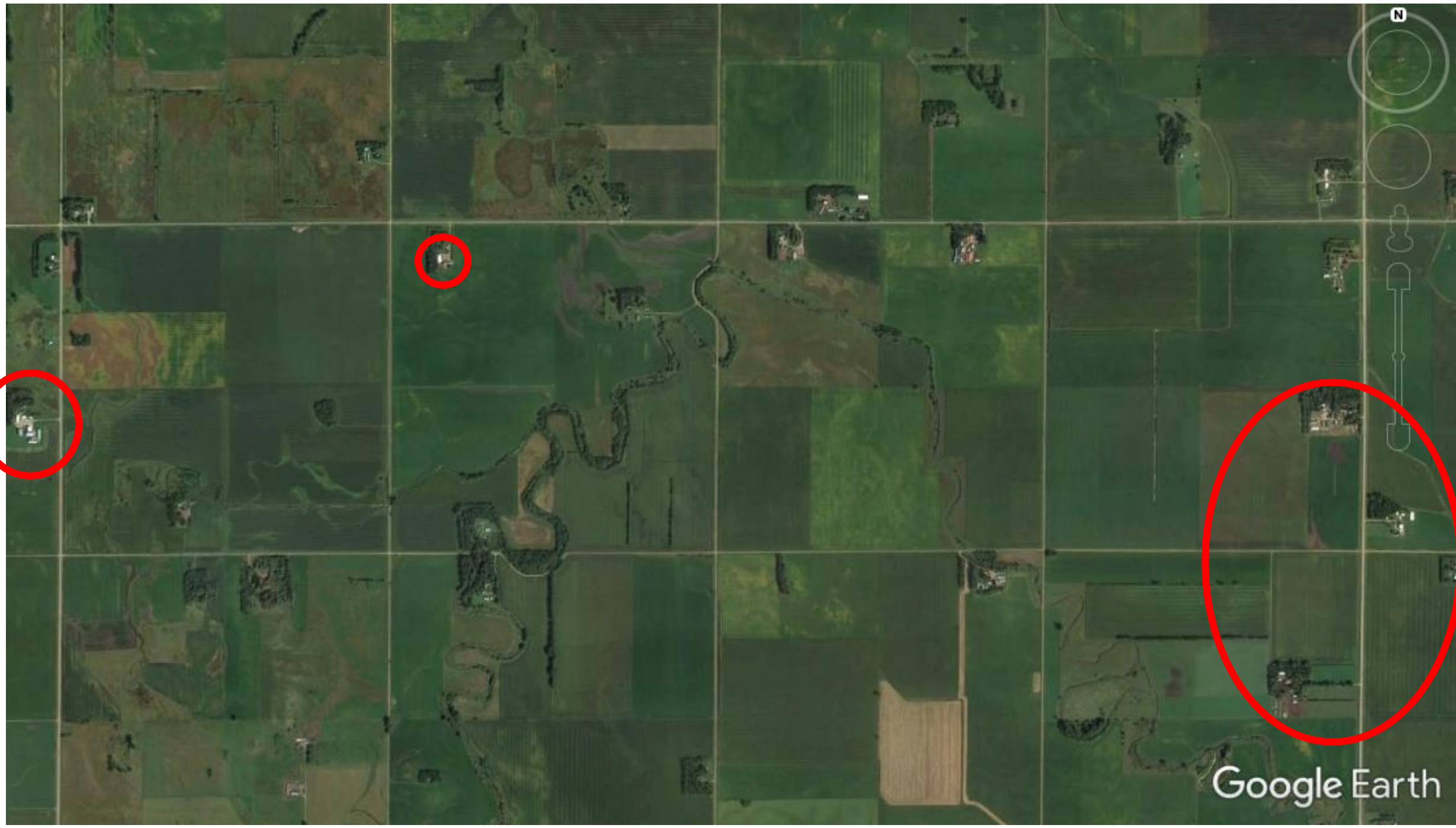
➤ **New Zealand:**

Canterbury plains

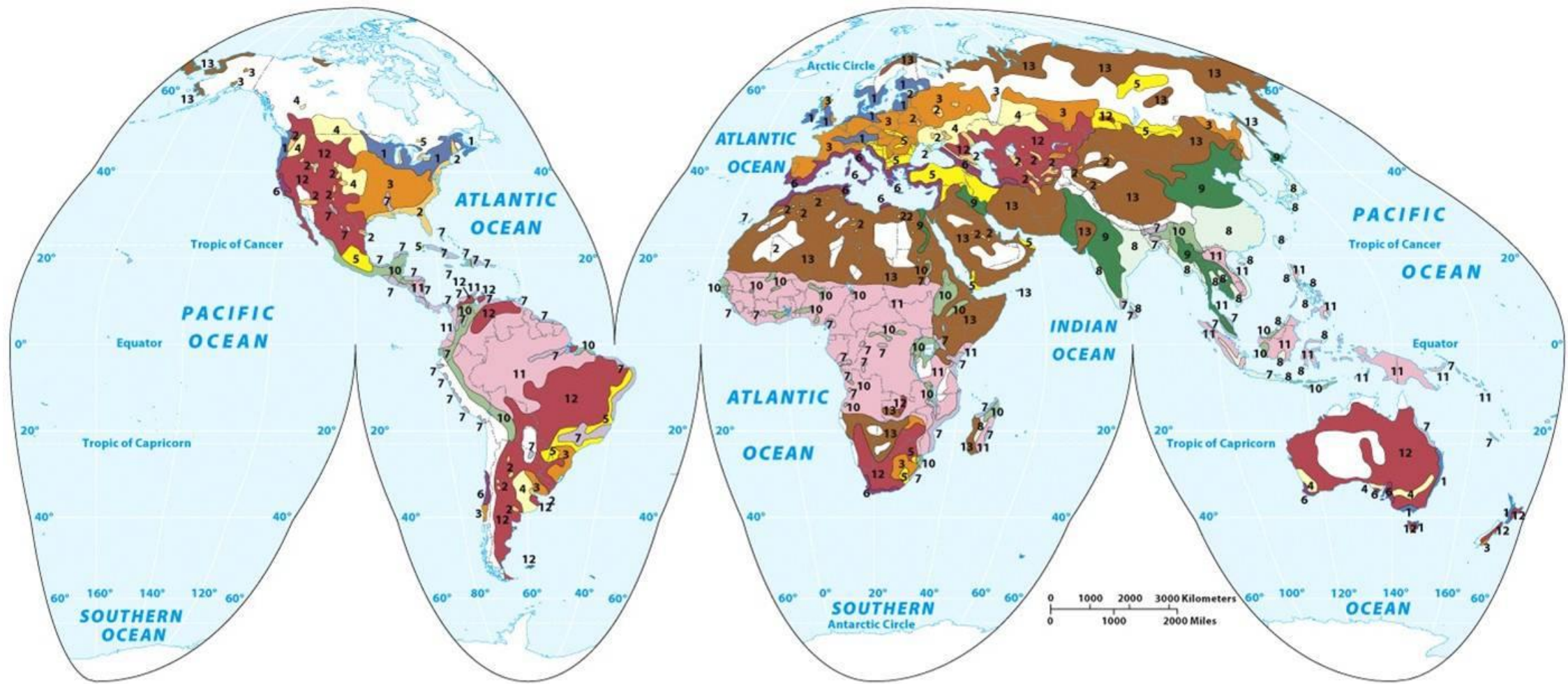


Fields in North Dakota





Google Earth



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Characteristics:

1. Specialization in single crop:

- ✓ Highly specialized and generally **one single crop** is grown.
- ✓ *Wheat monoculture* is practiced. It is **a cash crop** here.
- ✓ Both **winter wheat** and **spring wheat** is grown in these areas.
- ✓ *Maize, flax, barley* and *millets* are grown in drier parts

2. Farms are very large:

- ✓ Ranging from **240 to 16,000 hectares**
- ✓ **Land is cheap** therefore large holdings is observed
- ✓ Low density of population facilitates **higher per capita land availability**

3. Highly mechanized:

- ✓ Entire process of cultivation (**from ploughing to harvesting**) is mechanized
- ✓ *Tractors, harvesters, winnowers, thrashers* and other machines are employed during cultivation
- ✓ Apart from these, for marketing, *hayracks, wagons, mowers, stokers* and even *airplanes for spray of pesticides* are also necessary

4. Comparatively low yield per acre:

- ✓ Quite **low** *as compared to intensive tillage regions*
- ✓ **Average yield** is seldom more than *1,700 kg per hectare*

5. Lack of manual labour:

- ✓ Due to the **development of secondary and tertiary sectors** (mining, manufacturing, trade and commerce) in this whole region, agriculture is no more a lucrative occupation
- ✓ As population density is low and better scope of employment in other sectors exist, **labour becomes costly**

6. Transport and communication:

- ✓ **Speedy and smooth transport system** is a prerequisite here as entire dependency is on export market
- ✓ The area is crisscrossed by **super highways** and **railways** to facilitate smooth **export business**.

7. Farm ownership:

- ✓ Most of the farms are owned by **individuals**. *Co-operative* and *state participation* is almost absent

8. Climatic influence:

- ✓ *Low rainfall* (30 to 60 cm), bright sunshine during harvesting season and, little irrigation *crop failure* risks

9. Settlements:

- ✓ **Dispersed** settlements are observed. Known as '*Farmsteads*'
- ✓ Residential to commercial ratio is very low

10. Commercial Livestock and Crop Farming

- Aka “**Mixed farming**”. Commercial use of both livestock and crops
- **Location:**
 - **Mainly Europe**, and
 - also in the **humid middle latitudes** of all other continents except Asia

Major regions:

1. Ireland: Middle Europe (Temperate region)
2. U.S.A. (Eastern part): Ohio, Indiana, Illinois, Virginia, Oklahoma, Tennessee, Nebraska, Iowa

Other:

Mexico

Southern Brazil

Argentina

Eastern South Africa

South Eastern Australia

10. Commercial Livestock and Crop Farming

Characteristics:

- Supporting **dense population**
- **Urban** and **industrial** societies
- **High level of commercialization:** Products are sold at high prices in the market
- **High returns** of agricultural products
- **Standard living of famers** are far better as compared to others practicing the same

10. Commercial Livestock and Crop Farming

- Rainfall all year round and dry winters
- **Variety of soils** (high use of fertilizers) produces **variety of crops**
- Climate: Warm – **Wheat** (*Humans*), **Corn & Oats** (*Stock*)
Dry/Cold – **Barley** (*Jo*)
- Fine variety of grass/ (Pasture lands)
- *A major portion of agriculture produce is used by farm animals*
- **Crop rotation** is practiced

10. Commercial Livestock and Crop Farming

- Farm unit is characterized by : *House, ranch and machines*
- *Farm size:*
 - England: 10 – 15 hectare**
 - USA: 40-100 hectare**
- Use of machines
- Careful attention to **breeding** and **plant selection**
- **Training** to make **farmers** more efficient
- *Concentration of Marketing towns:* in a cash system there is much trade.



Corn Belt of USA

Background

- ▶ “मक्का” अमेरिका का मूल निवासी पौधा है।
- ▶ यह फसल **मध्य अमेरिका** में प्राचीन कालीन माया (Maya), एज़टेक (Aztec) और इनका (Inca) सभ्यताओं के समय में वहां के निवासियों का मुख्य भोजन थी।
- ▶ **3rd leading green crop in the world**
- ▶ It is used as **hay (चारा)** for meat producing animals but in Mexico, South America, South-Eastern Europe, India and China it is also utilized as **food crop**

Conditions for the cultivation of maize

- ▶ It is a **subtropical zone (उपोष्ण कटिबंधीय)** plant: 50° N- 50° S latitudes

Temperature :

- ▶ Summer: Average temperature = 21° C to 27° C
- ▶ Nights to be warm i.e. average temperature should not fall below 14° C
- ▶ फसल को पकने के लिए **कम से कम 140 दिनों का पाला रहित (frost-free days)** समय आवश्यक है
- ▶ फसल लगभग **3 महीनों (3 month)** में उत्पन्न होती है

Rainfall वर्षा:

- ▶ **Annual average rainfall 60-120 cm**
- ▶ Almost 20 cm is required in Summers only

Conditions...

- वर्षा की कमी में सिंचाई (irrigation) की सुविधा द्वारा भी मक्का की फसल बोई जाती है
- फसल के उपज में बारंबार वर्षा की बौछारों का होना आवश्यक है
- मक्का की खेती के लिए शीतल प्रदेश, सूखे ग्रीष्म ऋतु के क्षेत्र, अल्प वृष्टि के क्षेत्र, अति उष्ण प्रदेश अनुपयुक्त है

Soil मिट्टी

- कांप Alluvial अथवा गहरी दोमट Loamy मिट्टी
- मिट्टी में आर्द्रता (Humidity) होनी आवश्यक है

Topography धरातल

- मक्का के खेतों में पानी भरा नहीं रहना चाहिए

World Leaders In Corn (Maize) Production, By Country (2015)

1. USA (377.5 million metric tons)
2. China (224.9 million metric tons)
3. Brazil (83.0 million metric tons)
4. India (42.3 million metric tons)
5. Argentina (40.0 million metric tons)
6. Ukraine (39.2 million metric tons)
7. Mexico (32.6 million metric tons)
8. Indonesia (19.0 million metric tons)

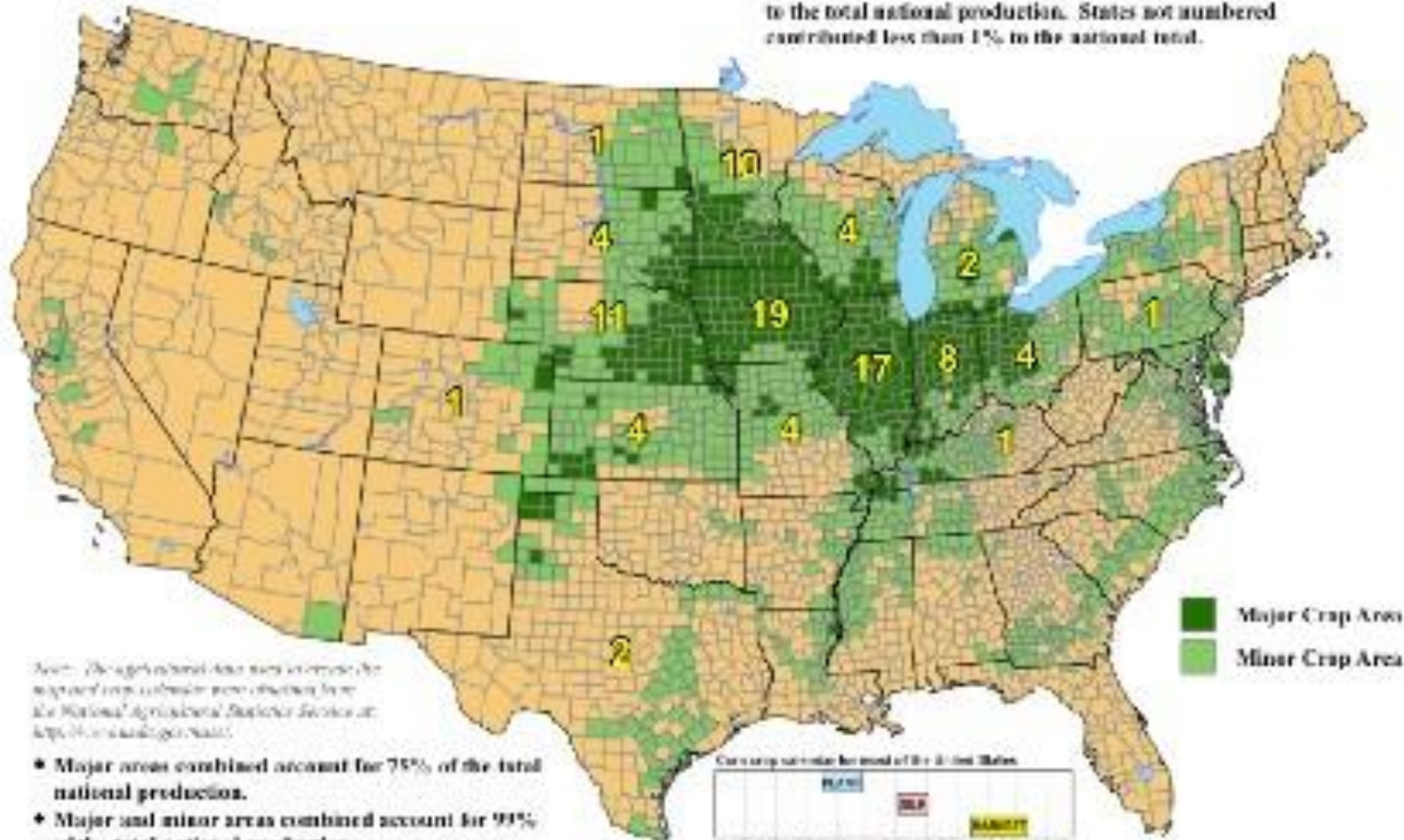
Corn Belt of USA

- ▶ This belt extends from **middle Ohio to middle Nebraska: 10% of the total land area of USA**
- ▶ States: **(Major 14 states)**
 - ▶ Pennsylvania
 - ▶ Kentucky
 - ▶ Connecticut
 - ▶ Missouri
 - ▶ Illinois
 - ▶ Indiana
 - ▶ Ohio
 - ▶ Kansas
 - ▶ Nebraska

Slides by Urmi Sharma

United States: Corn

Yellow numbers indicate the percent each state contributed to the total national production. States not numbered contributed less than 1% to the national total.



Note: The agricultural data used to create the map and crop calendar were obtained from the National Agricultural Statistics Service at: <http://www.nass.usda.gov>.

- Major areas combined account for 75% of the total national production.
- Major and minor areas combined account for 99% of the total national production.
- Major and minor areas and state production percentages are based upon averaged NASS county-level and state production data from 2000-2004.

Corn crop calendar for most of the United States



Crop calendar dates are based upon NASS crop progress data from 2000-2004. The data includes any crop development stages identified in the crop calendar reports and the average time period when national progress advancement from 40 to 60 percent.

CANADA



WWW.FREEWORLDMAPS.NET

MEXICO

Conditions favoring Corn Production in USA

- ▶ लगभग समतल भूमि (Plain topography)
- ▶ Fertile soil
- ▶ 3 months warm day and night
- ▶ 140 से 180 दिनों तक फसल उगाने का मौसम
- ▶ ग्रीष्म काल में 50 से 100 cm वर्षा
- ▶ उर्वरकों का प्रयोग अधिक कर सघन कृषि (Intensive cultivation practices) द्वारा मक्का का उत्पादन अत्यधिक किया जा रहा है।
- ▶ संकर मक्का की किस्मों का उपयोग **Use of hybrid corn**
- ▶ **Scientific cultivation** of corn is an important reason for very high per hectare production
- ▶ Approximately **96 million acre** of land under Corn production:
39% of USA land area

Conditions favoring Corn Production in USA

- ▶ It is dominated by West-North Central Iowa and East-Central Illinois
- ▶ Approximately **13% of its annual yield** is **exported**
- ▶ Henry A Wallace (1950) former Vice President and former Secretary of Agriculture observed that “***the corn belt had developed in into the most productive agricultural civilization the world has ever seen***”
- ▶ Today the corn production level in American farms is significant **20% higher per acre than in the rest of the world**
- ▶ 1957 National Congress Association NCA
- ▶ 1987 (14 states) American Corn Growers Association ACGA
To protect the interests of corn farmers
मक्का उत्पादित करने वाले कृषकों के हितों की रक्षा के लिए

Production Fact file:

- ▶ In 2018: World's 35% corn production came from this belt

- ▶ **2013-14:**

13.016 billion bushels production

(1 bushel of corn = 56 pounds = 25.4 kilogram)

37% = is used for manufacturing ethanol and its co-product

35% = Livestock feed (dairy, beef cattle, hogs, poultry)

11% = Export

17% = Other, Residual Use

Production Fact file:

- ▶ In 2016 USA exported 250 6.5 million metric tons of corn
- ▶ Leading buyers were **Japan** and **Mexico**
- ▶ 95% of farms are family owned परिवार का स्वामित्व
- ▶ More than **30% of corn farms** are operated by **WOMEN**
- ▶ Farming practices based on irrigation is only about 11% of area
- ▶ कृषि की पद्धतियों को वैज्ञानिक रूप से संचालित किया जा रहा है जिसे मक्का पेटी में 44% तक मिट्टी का अपरदन कम हुआ है
- ▶ अमेरिकी व्यक्ति वर्ष में औसतन US \$ 267 (Rs 18,000) मक्का की खरीद पर खर्च करता है
- ▶ देश में बढ़ती मक्के की मांग तथा उस पर निर्भरता के फलस्वरूप मक्का के आर्थिक मूल्य में प्रतिदिन वृद्धि होती जा रही है

Production Fact file:

State wise facts

1. Iowa

- ▶ Largest producer of cotton in USA growth three times higher than Mexico average farm size = 333 acre or 135 hectares
- ▶ Average dollar value per acre equals to US \$ 6708

2. Nebraska aka 'cornhuskers state'

- ▶ Third largest state in USA

3. Minnesota

- ▶ Biggest crop 2012 1.37 billion bushels

4. Illinois

- ▶ 12.8 million acres ranks 4th

5. Alaska

- ▶ Cold climate grows corn using greenhouse farming techniques
- ▶ Indiana mainly for animal feed

6. Other: Texas, Alabama