

# Agriculture

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# Hunting and Gathering

Gathering is practiced in regions with harsh climatic conditions.

- It involves primitive societies that extract from both plants and animals to satisfy their basic needs.
- The yield per person is meagre and little, or no surplus is produced .

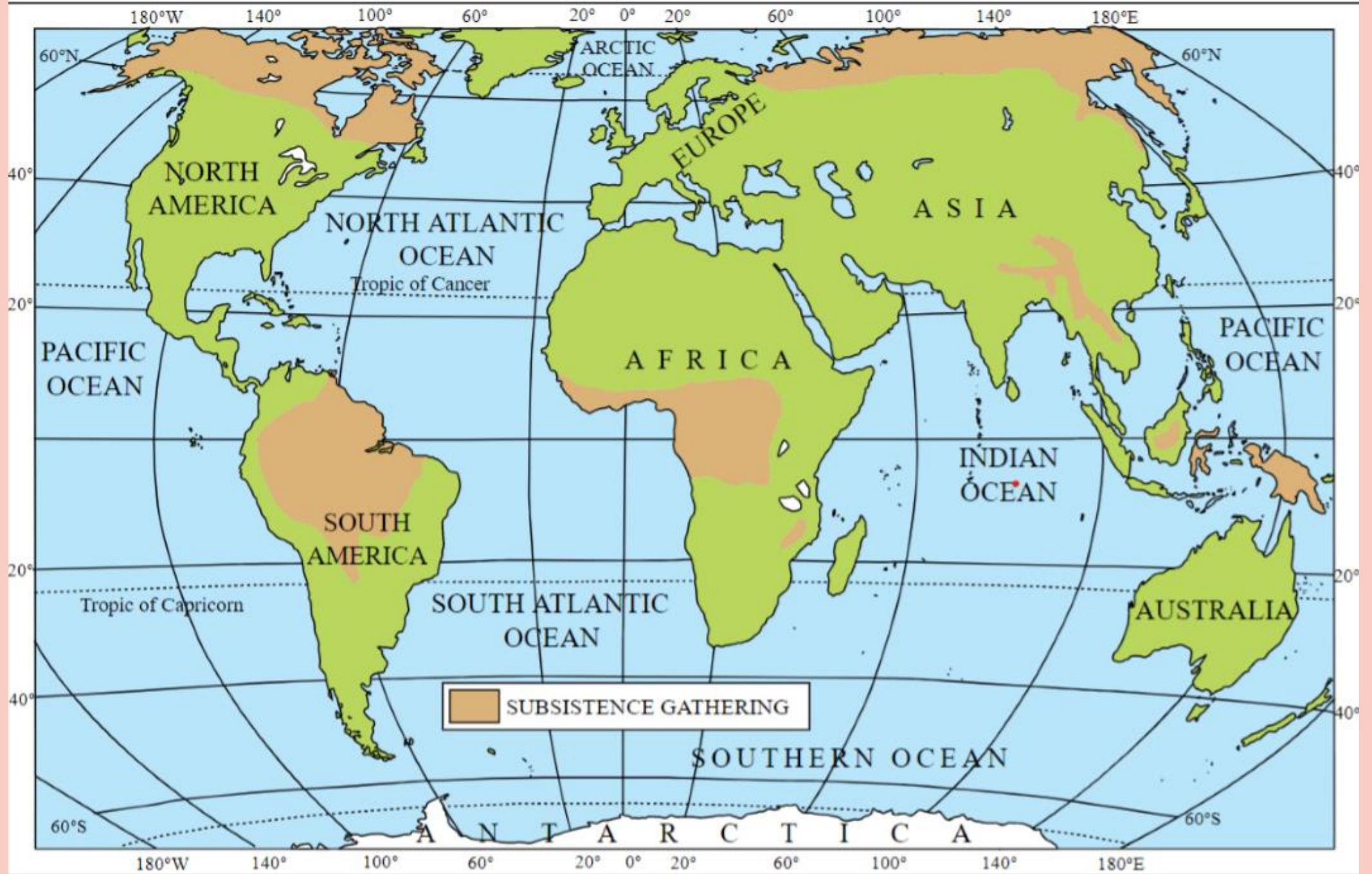
High latitude zones which include northern Canada, northern Eurasia and southern Chile.

Low latitude zones such as the Amazon Basin, tropical Africa, Northern fringe of Australia and the interior parts of Southeast Asia

They use various parts of the plants, e.g., the bark is used for quinine, tanin extract and tree trunk yield rubber, gums and resins.

- The chewing gum - it is made from the juice of zapota tree





As hunting was unsustainable, humans began the domestication of animals.

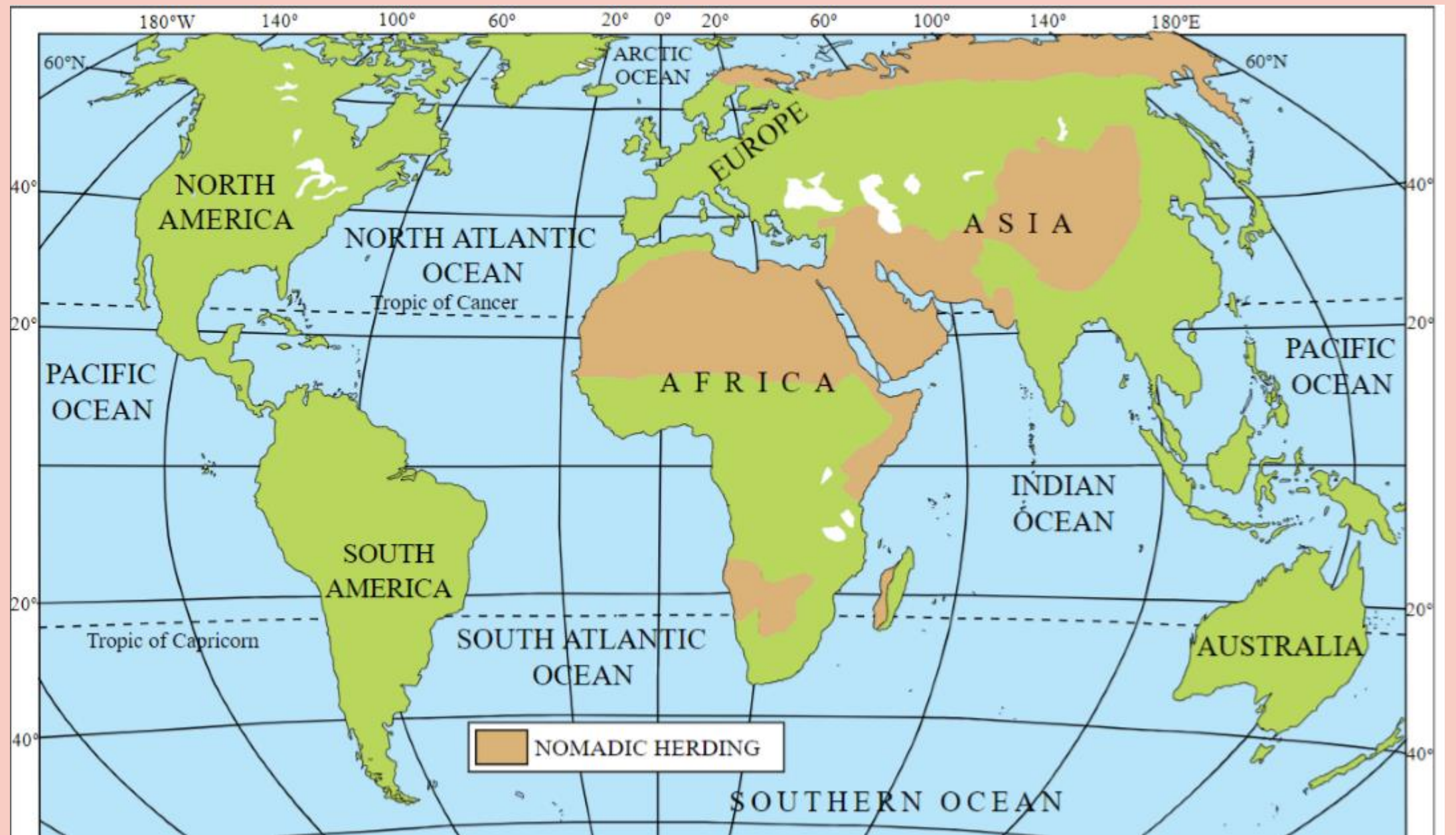
- People living in different climatic conditions selected and domesticated animals found in those regions.

### Nomadic Herding (pastoral nomadism)

Nomadic herding is a primitive subsistence activity.

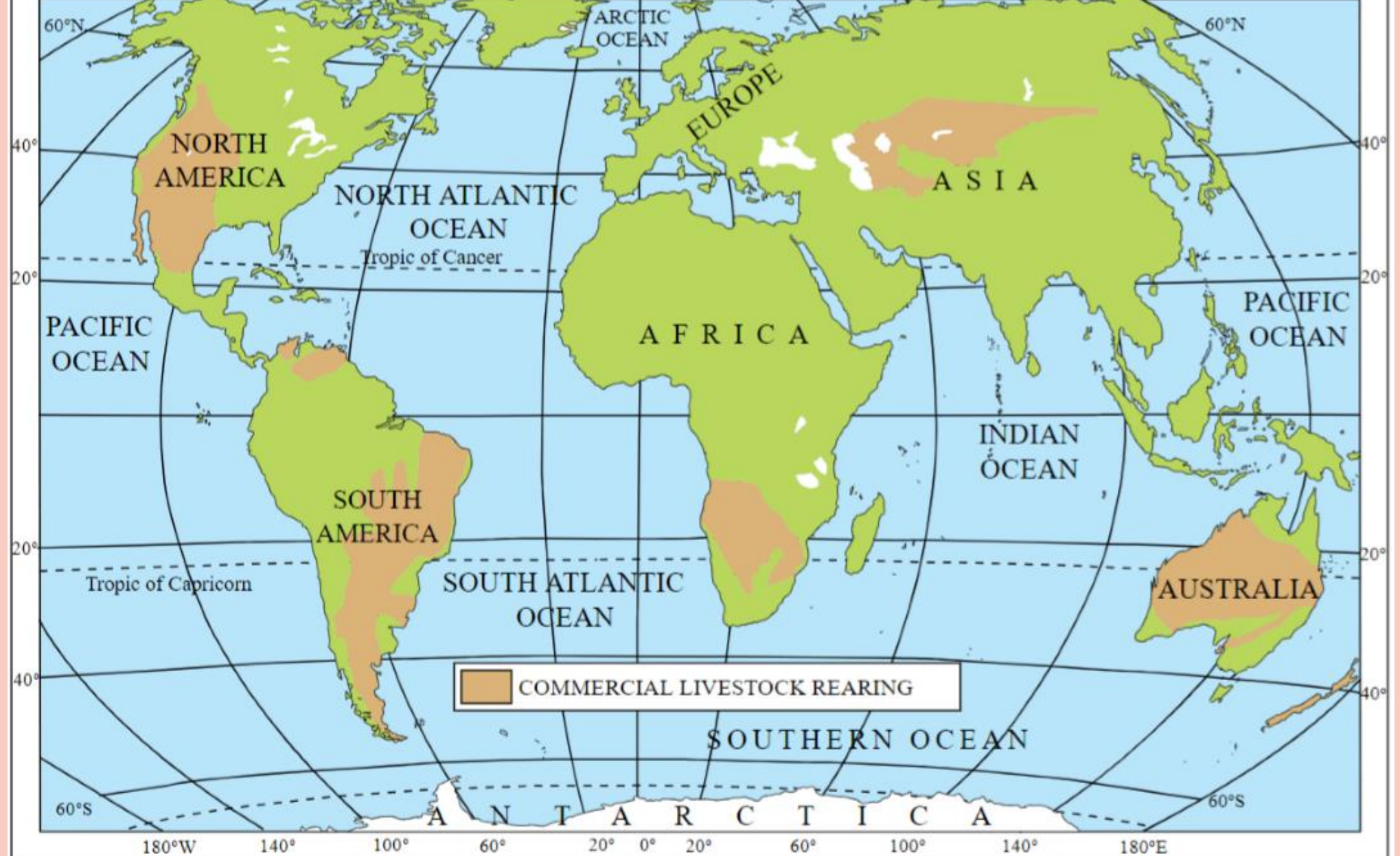
- They move from place to place along with their livestock, depending on the availability of pastures & water.
- The core region extends from the Atlantic shores of North Africa eastwards across the Arabian Peninsula into Mongolia and Central China.
- The second region extends over the tundra region of Eurasia.
- In the southern hemisphere there are small areas in South-west Africa and on the island of Madagascar
- The process of migration from plain areas to pastures on mountains during summers and again from mountain pastures to plain areas during winters is known as **transhumance**. In mountain regions, such as Himalayas, Gujjars, Bakarwals, Gaddis and Bhotiyas migrate from plains to the mountains in summers and to the plains from the high altitude pastures in winters.





## Commercial Livestock Rearing

- Commercial livestock rearing is more organized and capital intensive.
- Commercial livestock ranching is associated with western cultures and is practiced on permanent ranches.
- New Zealand, Australia, Argentina, Uruguay and the United States of America are important countries where commercial livestock rearing is practiced.
- These ranches (a large farm where cattle are bred) cover large areas





## Subsistence Agriculture

In subsistence agriculture, almost all the production is consumed locally with little or nothing left for trade.

### Primitive Subsistence Agriculture

- Primitive subsistence agriculture or shifting cultivation is widely practiced **by many tribes** in the tropics.
- The vegetation is usually cleared by fire, and the ashes add to the fertility of the soil.
- Shifting cultivation is thus, also called slash and burn agriculture.
- It is prevalent in the tropical region in different names, e.g. Jhuming in Northeastern states of India, Milpa in Central America and Mexico and Ladang in Indonesia and Malaysia



## **Intensive Subsistence Agriculture**

- This type of agriculture is largely found in densely populated regions of monsoon Asia.
- There are two types of intensive subsistence agriculture.

### **Intensive subsistence agriculture dominated by wet paddy cultivation**

- Landholdings are very small due to the high density of population.
- Farmers work with the help of family labour leading to intensive use of land.
- Use of machinery is limited, and most of the agricultural operations are done by manual labour.
- In this type of agriculture, the yield per unit area is high but per labour productivity is low.

### **Intensive subsistence agriculture dominated by crops other than paddy**

- Due to the difference in relief, climate, soil, etc. it is not practical to grow paddy in parts of monsoon Asia.
- Wheat, soyabean, barley & sorghum are grown in northern China, North Korea and North Japan.
- In India wheat is grown in plains and millets are grown in dry parts of western and southern India.
- Most of the characteristics are similar to that of wet paddy cultivation except that irrigation is often used.



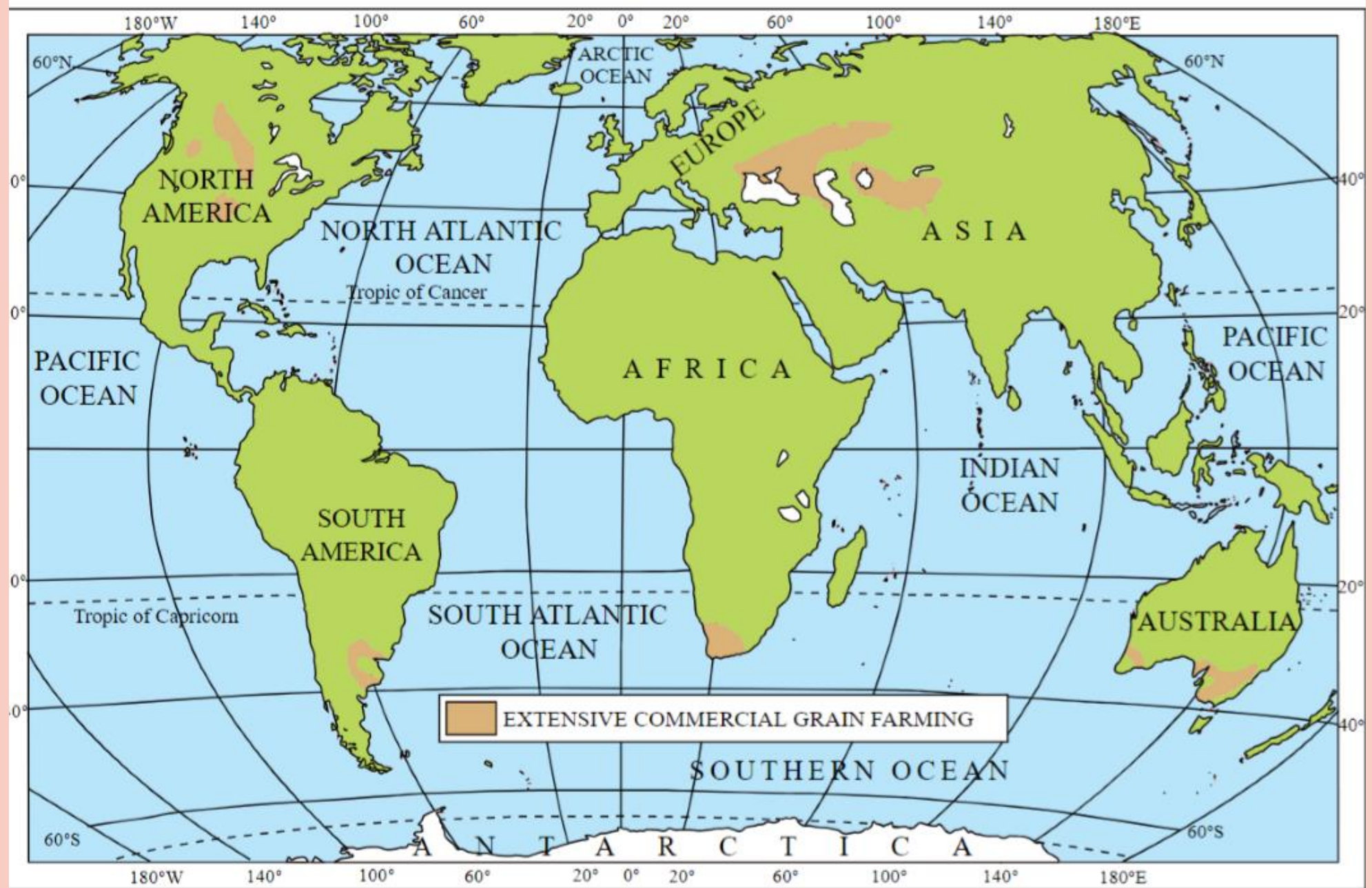
## Plantation Agriculture

- Plantation agriculture was introduced by the Europeans in colonies situated in the tropics.
- Plantations are mainly profit-oriented large scale production systems.
- E.g. tea, coffee, cocoa, rubber, cotton, palm, sugarcane, banana & pineapple
- The French established cocoa and coffee plantations in west Africa.
- The British set up large tea gardens in India and Sri Lanka, rubber plantations in Malaysia and sugarcane and banana plantations in West Indies
- Spanish and Americans invested heavily in coconut and sugarcane plantations in the Philippines.
- The Dutch once had a monopoly over sugarcane plantation in Indonesia.
- Some coffee fazendas (large plantations) in Brazil are still managed by Europeans

## **Extensive Commercial Grain Cultivation**

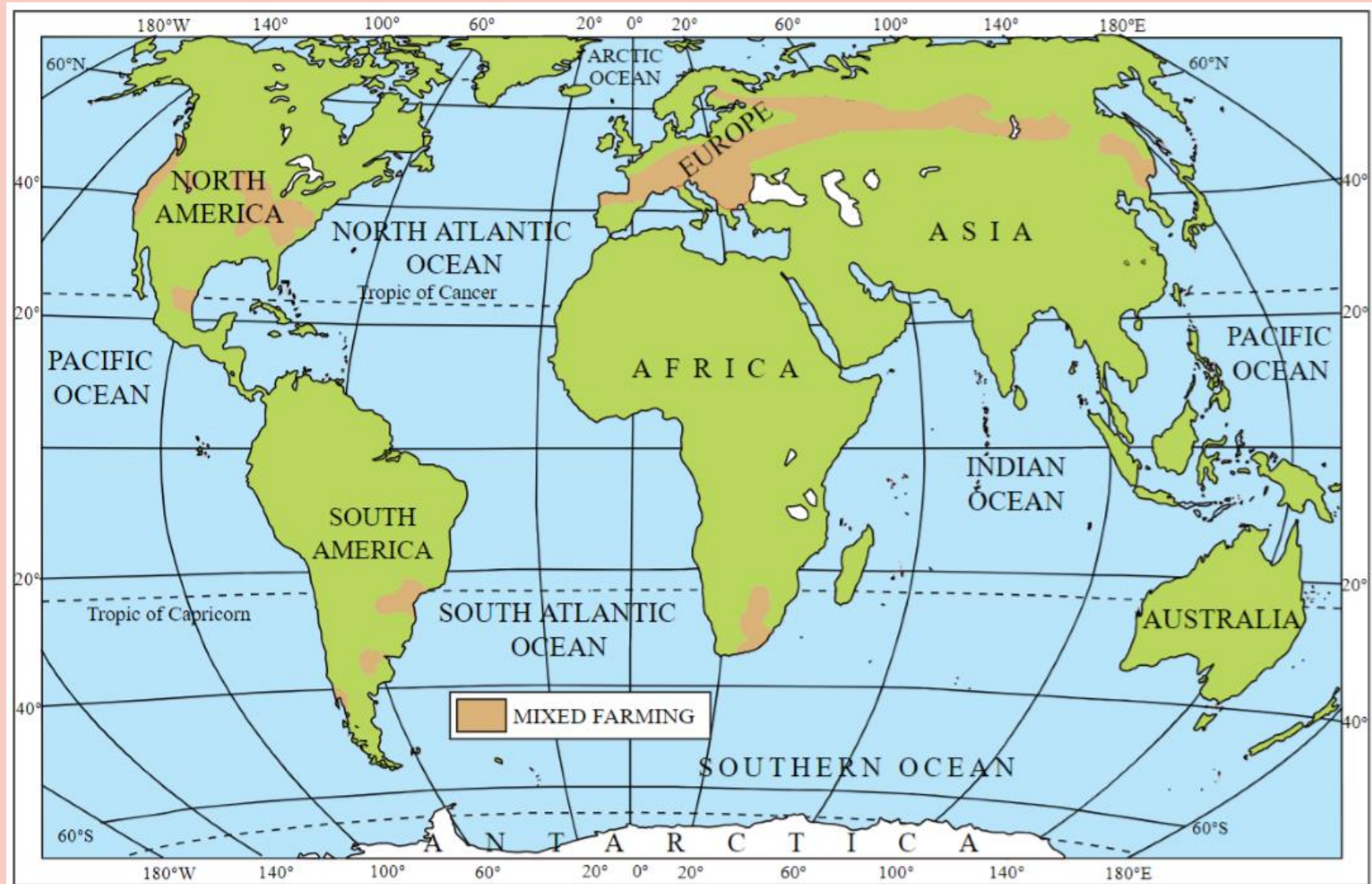
- Commercial grain cultivation is practiced in the interior parts of semi-arid lands of the midlatitudes.
- Wheat is the principal crop, though other crops like corn, barley, oats are grown.
- The size of the farm is very large. Therefore entire operations of cultivation are mechanized.
- This type of agriculture is best developed in the Eurasian steppes, the North American Prairies, Pampas of Argentina, Velds of South Africa, the Australian Downs and the Canterbury Plains of New Zealand.





## **Mixed Farming**

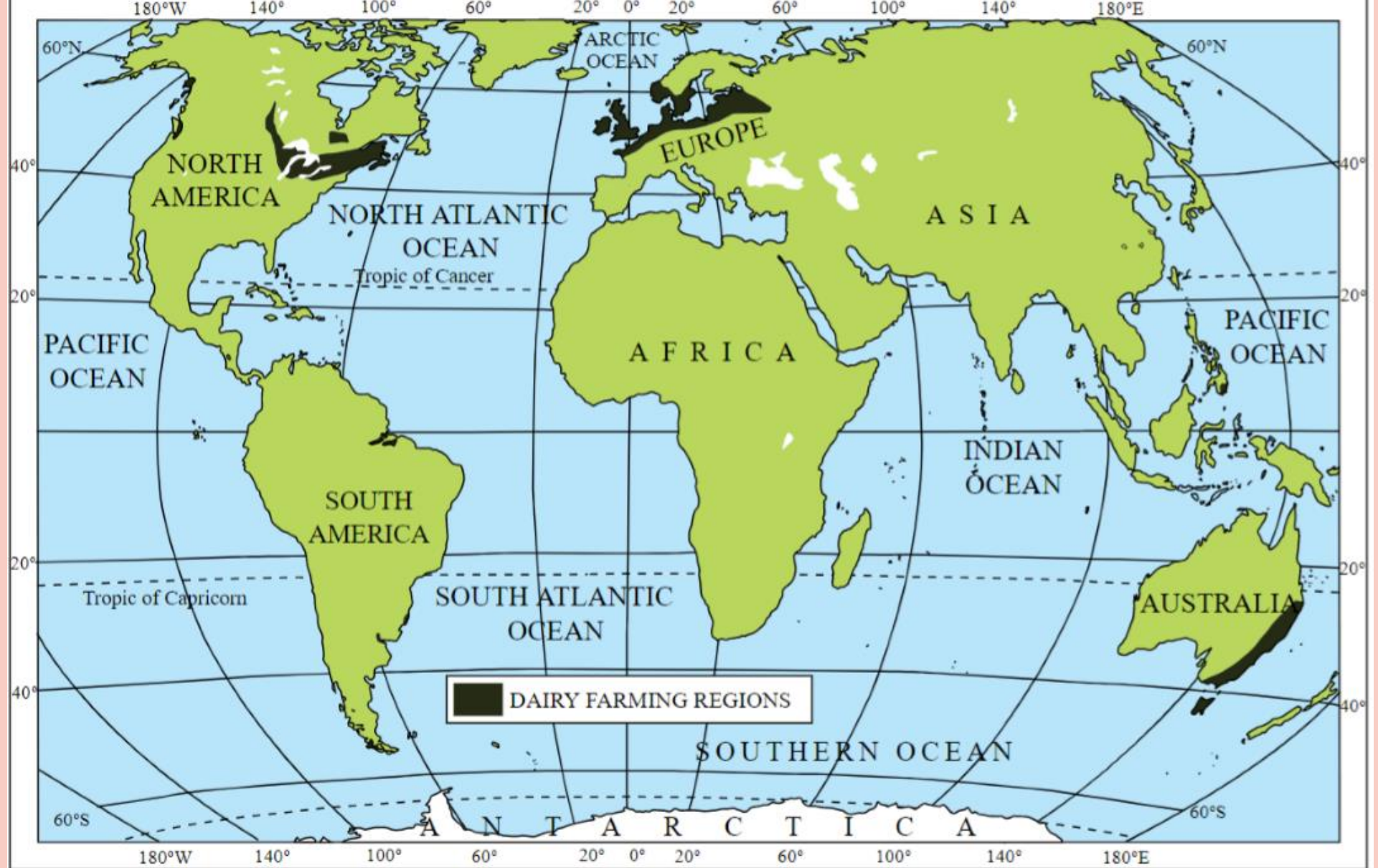
- Mixed farms are moderate in size & the crops grown are wheat, barley, oats, maize, fodder & root crops.
- Animal husbandry is an essential component of mixed farming.
  - Animals like cattle, sheep, pigs and poultry provide the primary income along with crops.
- Crop rotation and intercropping play an essential role in maintaining soil fertility.



## **Dairy Farming**

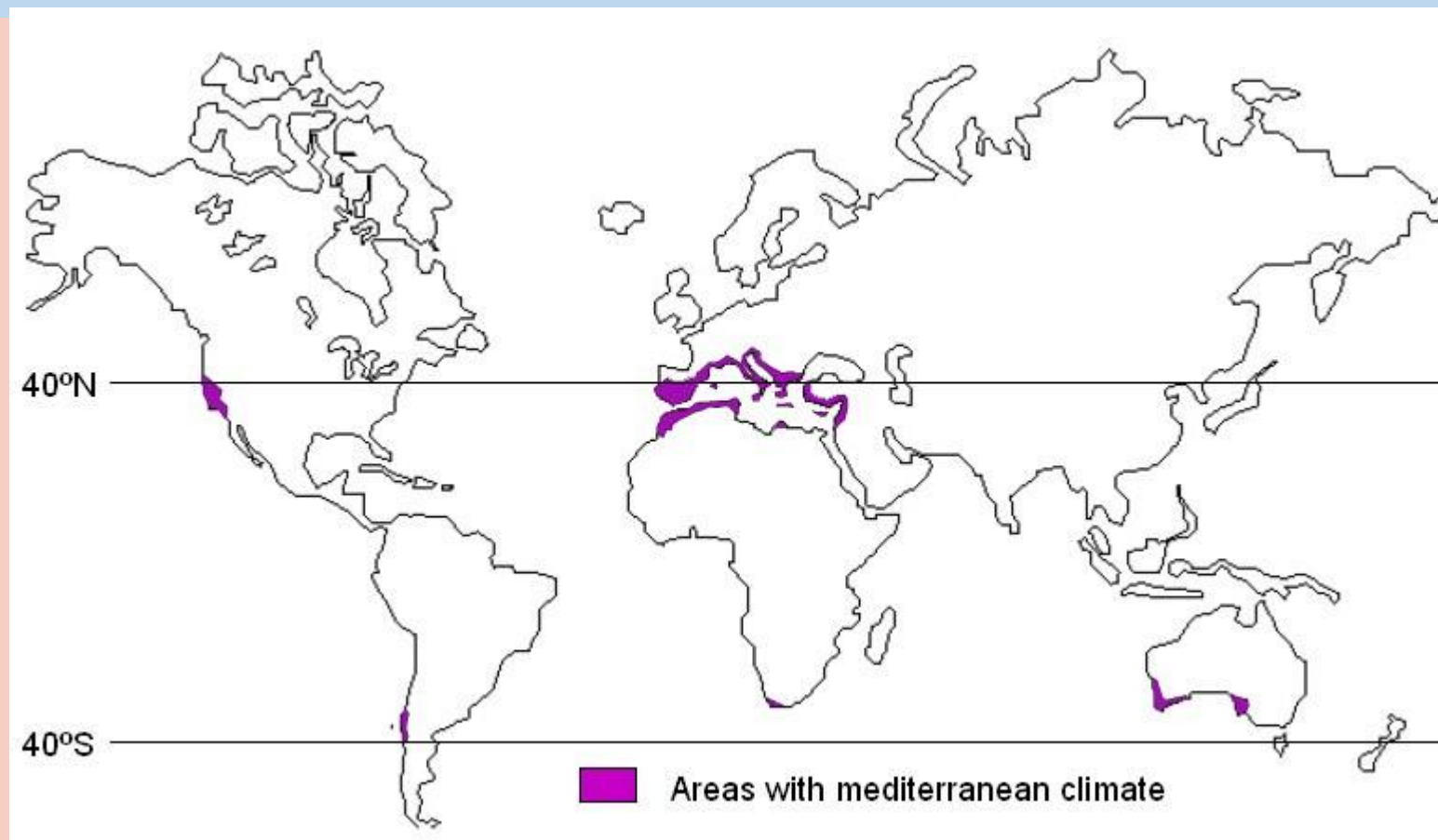
- Dairy is the most advanced and efficient type of rearing of milch animals.
- It is highly capital intensive.
- Animal sheds, storage facilities for fodder, feeding and milking machines add to the cost of dairy farming.
- It is practised near urban centres which provide a neighbourhood market for fresh milk & dairy products
- The largest is North Western Europe the second is Canada, and the third belt includes South Eastern Australia, New Zealand and Tasmania.





## Mediterranean Agriculture

- Mediterranean agriculture is highly specialised commercial agriculture.
- It is practised in the countries on either side of the Mediterranean Sea, southern California, central Chile, southwestern parts of South Africa and south and southwestern parts of Australia.
- This region is an important supplier of citrus fruits.
- Viticulture or grape cultivation is a speciality of the Mediterranean region.
- Best quality wines.



## Market Gardening and Horticulture

- Market gardening and horticulture specialize in the cultivation of high-value crops such as vegetables, fruits and flowers, solely for the urban markets.
- Farms are small and are located where there are good transportation links with the urban centre.
  - It is both labour and capital intensive
- This type of agriculture is well developed in densely populated industrial districts of north-west Europe, northeastern United States of America and the Mediterranean regions.
- The farming where farmers specialize in vegetables only is known as **truck farming**.
- The distance of truck farms from the market is governed by the distance that a truck can cover overnight.
- The modern development in the industrial regions of Western Europe & North America is **factory farming**.

## Factors that influence cropping pattern

### Relief

- Rice is the main crop on the irrigated hill terraces (terraced cultivation).
- In **well-irrigated plains, rice and sugarcane** dominate.
- Wheat (temperate crop) grows well in plain regions with moderate temperature and rainfall.
- Crops like tea and coffee can be grown only on **well-drained slopes** that receive a **good amount of rainfall**.

### Climate

- For example, in Punjab, rice is grown during the rainy season, but wheat takes over during winter.
- In rainfed areas, rice is cultivated extensively when the monsoons are good. But when monsoons are weak, millets are grown instead of rice.
- **Cotton in Maharashtra, tea in Assam and jute in West Bengal** remain the dominant crops due to highly favourable climatic conditions for cultivation



## Temperature

- **Sugarcane gives good yield in south India than in northern plains** as it needs a **warm climate**.
- Some crops require a higher temperature and are sown in the summer season.
- Most of the growth period falls under the rainy season.
- These are known as **Kharif crops** (rice, cotton, maize, etc.).
- There are other crops which require lower temperature and moisture and are sown in the winter season (wheat). These are known as **Rabi crops**.

- **Rainfall**

- **Areas of Heavy Rainfall**

- More than **150 cm** of annual rainfall.
    - East India and the western coastal plains.
    - 150 cm annual rainfall isohyets are suitable for the cultivation of **rice**.
    - Crops: Rice, tea, coffee, sugarcane, jute etc.

- **Areas of Medium Rainfall**

- 75 to 150 cm of annual rainfall.
- Eastern part of Uttar Pradesh, Bihar, Odisha, eastern parts of Madhya Pradesh and Vidarbha region of Maharashtra.
- **Wheat** is the principal rabi crop.
- Millets are the natural priority.
- Crops: Wheat, maize, cotton, soyabean, millets, etc.

- **Areas of Low Rainfall**

- 25 to 75 cm of annual rainfall (Semi-arid stretches of India).
- Major crops in this belt are
- **millets, jowar, and bajra in the northern,**
- **jowar in central and**
- **ragi in the southern part.**

## Soil

- **Regur** soils are ideal for cotton cultivation.
- Cotton is the obvious choice in such soils when the climate is also favourable.
- **Clayey soils** are good at retaining soil moisture for longer duration and hence they are ideal for rice cultivation wherever irrigation is adequate.
- **Well-drained** loamy soils are best for wheat.
- Coarse grains such as jowar, bajra, maize, ragi, barley etc. are grown in **inferior soils** (light sandy soils, light black soils, red and laterite soils etc.)
- **Delta soils** of West Bengal are renewed by floods every year and are very fertile. They are ideal for **jute cultivation**. The farmers grow 2-3 crops in a year.
- Soils of the **Darjeeling hills** contain sufficient quantities of humus, iron, potash and phosphorus which are necessary for a tea bush to grow.

## **Economic Factors**

**Irrigation**

**Free Power, Minimum Support Price (MSP) and other subsidies Value**

**Demand and Supply**

**Size of Land Holdings**



## Crop Classification

### Food Crops

- Cereals are grass-like plants with starchy edible seeds having high nutritional value.
- India produces a variety of cereals, which are classified as fine grains (rice, wheat) and coarse grains (jowar, bajra, maize, ragi), etc.
- Major millets: Sorghum or Jowar, Pearl Millet or Bajra and Finger millet or ragi.
- Minor millets: Foxtail millet, Little millet, Common millet, Barnyard millet etc.
- Millets are the staple food of poor people.
- **Pulses:** red gram, black gram, green gram, cowpea, bengalgram, soyabean, peas or gardenpea, garden bean etc.  
Pulses are a major source of **protein**

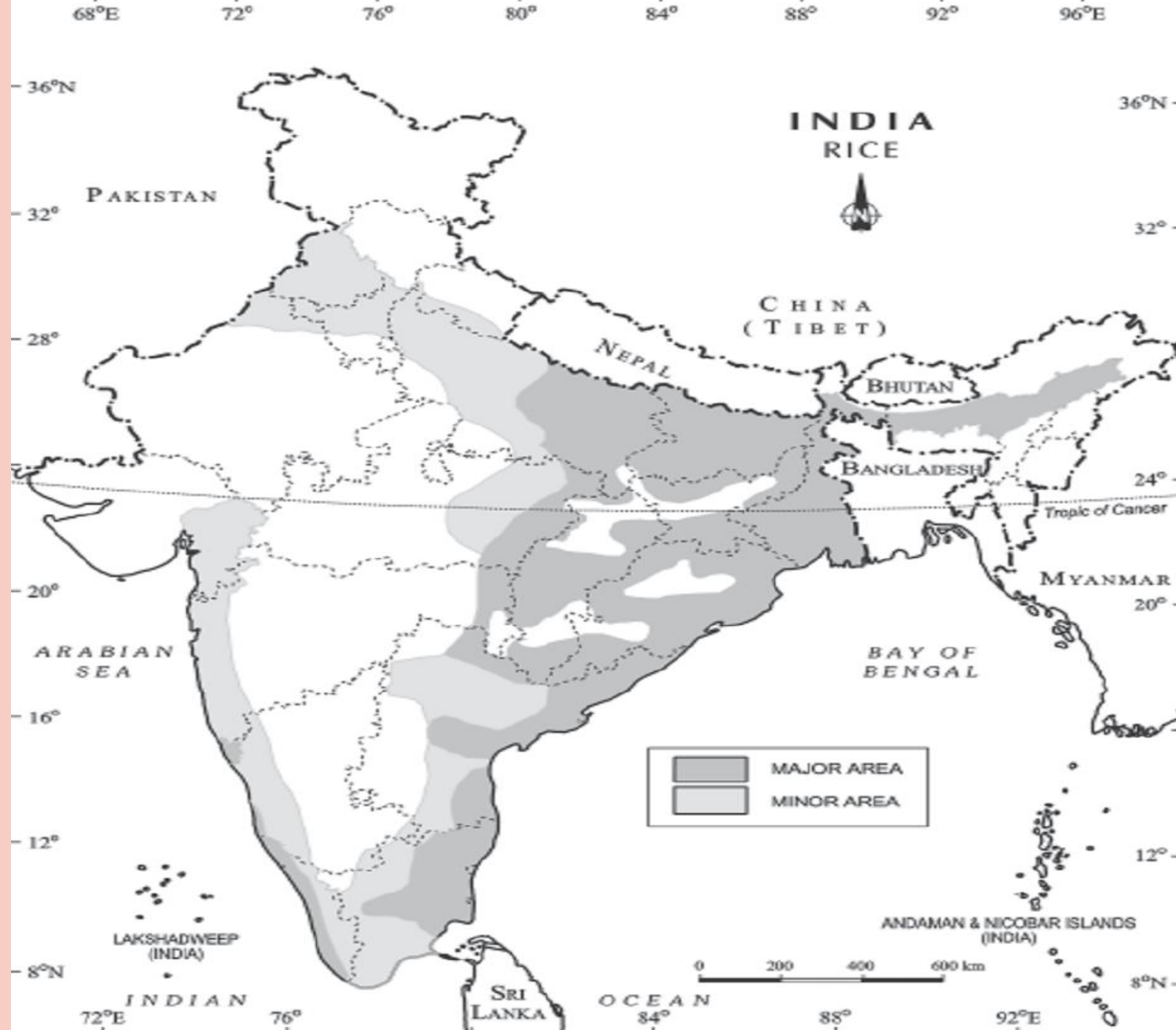
Cash Crops	<ul style="list-style-type: none"> <li>• Cotton, jute, sugarcane, tobacco, oilseeds, groundnut, linseed, sesamum, castor seed, rapeseed, mustard, etc.</li> <li>• Oil Seeds: Groundnut or peanut, sesamum, sunflower, castor, linseed, rapeseed &amp; mustard etc.</li> <li>• Fiber crops: Cotton; Stem fiber: Jute, mesta, sun hemp, sisal hemp etc.</li> </ul>
Plantation Crops	<ul style="list-style-type: none"> <li>• Tea, coffee, coconut, arecanut, rubber and spices — ginger, garlic, chili, cumin onion, coriander, cardamom, pepper, turmeric etc.</li> </ul>
Horticulture Crops	<ul style="list-style-type: none"> <li>• Vegetables: Onion, tomato, etc.</li> <li>• Fruits: Apple, Orange, Mango, banana, citrus fruits, etc.</li> </ul>

Kharif/Rainy/Monsoon crops	Rabi/winter/cold seasons crops	Summer/Zaid crops
<ul style="list-style-type: none"> <li>The crops grown in monsoon months</li> </ul>	<ul style="list-style-type: none"> <li>The crops grown in winter season</li> </ul>	<ul style="list-style-type: none"> <li>Crops grown in summer</li> </ul>
<ul style="list-style-type: none"> <li>Sown before monsoon and harvested at the end of the monsoon</li> </ul>	<ul style="list-style-type: none"> <li>Sown before retreating monsoon and harvested before summer.</li> </ul>	<ul style="list-style-type: none"> <li>Sown and harvested in summer</li> </ul>
<ul style="list-style-type: none"> <li>Cropping period: June to Oct-Nov</li> </ul>	<ul style="list-style-type: none"> <li>Oct to March</li> </ul>	<ul style="list-style-type: none"> <li>March to June</li> </ul>
<ul style="list-style-type: none"> <li>Require warm, wet weather at major period of crop growth</li> </ul>	<ul style="list-style-type: none"> <li>Crops grow well in cold and dry weather</li> </ul>	<ul style="list-style-type: none"> <li>Require warm dry weather for major growth period</li> </ul>
<ul style="list-style-type: none"> <li>E.g. Paddy (Rice), Cotton, Jute, Jowar, Bajara (pearl millet), Finger millet (ragi), Maize, Sorghum, Tur, Moong, Urad, Soyabean, Groundnut etc.</li> </ul>	<ul style="list-style-type: none"> <li>E.g. Wheat, Gram, Peas, Barley, Oats, Linseed, Mustard, Sunflower etc.</li> </ul>	<ul style="list-style-type: none"> <li>E.g. Watermelon, Pumpkins, Gourds, Vegetables etc.</li> </ul>

- Rice Crop (Paddy)  
Rice is ideally a **kharif crop** (**wet** and **warm** climate is ideal for rice cultivation).
- **13.3%** of India's land is under rice cultivation
- India is the **2<sup>nd</sup> largest producer and consumer of rice** in the world after **China** (148 MT).
- **India now occupies first position in rice exports.**

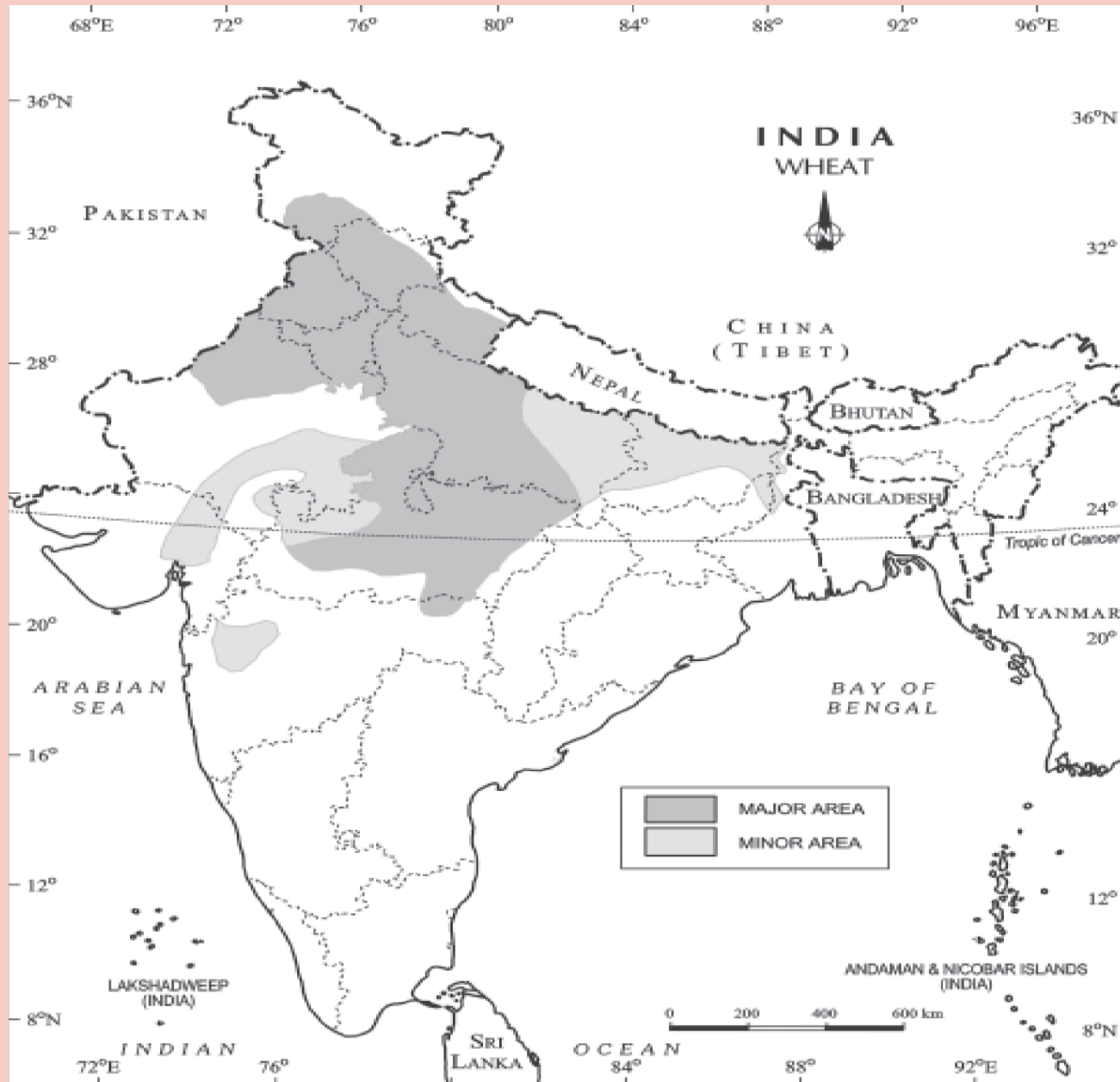
	State	Area	Production	Yield	
1	West Bengal	5.1 (11.7%)	15 (13.3%)	2.9	Low productivity
2	Punjab	3.1 (7%)	13.4 (11.9%)	4.4	Highest productivity
3	Uttar Pradesh	5.8 (13.3%)	13.3 (11.8%)	2.3	Low productivity
4	Andhra Pradesh	2.2 (4.9%)	8.2 (7.2%)	3.8	High Productivity
5	Bihar	3.3 (7.5%)	7.9 (7%)	2.4	Low productivity
6	Tamil Nadu	1.9 (4.2%)	7.3 (6.5%)	3.9	High Productivity





- **Wheat**
- It is a **rabi crop** (winter crop – requires cool and less moist climate).
- 75 cm of temporally (time) well distributed rainfall is ideal.
- 100 cm is the highest limit.
- ~9% of total land area of India is under wheat cultivation.
- India (99 MT) is the **second largest producer of wheat** in the world next only to **China**

	State	Area	Production	Yield	
1	Uttar Pradesh	9.75 (33%)	31.9 (32%)	3.3	Yield decreases as rainfall increases eastwards
2	Punjab	3.51 (11.8%)	17.9 (18%)	5.0	Highest Yield due to Optimal Climate
3	Madhya Pradesh	5.32 (18%)	15.9 (16%)	3.0	Yield is low due to poor irrigation
4	Haryana	2.53 (8.6%)	11.2 (11%)	4.4	High Yield due to Optimal Climate
5	Rajasthan	2.81 (9.5%)	9.2 (9.2%)	3.2	Yield decreases as aridity increases
6	Bihar	2.04 (6.9%)	5.7 (5.8%)	2.8	Yield decreases as rainfall increases eastwards
7	Gujarat	1.06 (3.6%)	3.1 (3.1%)	2.9	Yield decreases as aridity increases
8	Maharashtra	0.92 (3.1%)	1.62 (1.6%)	1.7	Less favourable climatic conditions
	All India	29.58	99.7	3.3	



- **Maize**
- Maize is often known as **Indian corn**.
- It is a rainfed **kharif crop** which requires temperature between 21°C to 27°C
- 100cm rainfall
- **USA**, China and Brazil are the leading producers.

	State	Area – Million Hectares	Production (MT)	Yield – tonnes/hectare
1	Karnataka	1.3 (13.6%)	3.6 (12.4%)	2.8
2	Maharashtra	1.2 (12.2%)	3.5 (12.3%)	3.1
3	Madhya Pradesh	1.4 (14.3%)	3.5 (12.3%)	2.6
4	Tamil Nadu	0.3 (3.6%)	2.6 (9.2%)	7.7
5	Telangana	0.6 (6.7%)	2.6 (8.9%)	4.1
6	Bihar	0.7 (7.1%)	2.4 (8.44%)	3.6
7	Andhra Pradesh	0.3 (3.6%)	2.3 (8.02%)	6.9
	All India	9.5 Mha	28.7 MT	3.0

## Millets

- Jowar, bajra and ragi are the important millets grown in India.
- Though, these are known as coarse grains, they have very high nutritional value.
  - **Jowar (Sorghum)**
- Jowar has a high nutritional value.
- It is main food crop in semi-arid areas of central and southern India.
- Jowar is the third most important food crop with respect to area and production.
- It is a rain-fed crop mostly grown in the moist areas which hardly needs irrigation.
- Jowar is grown **as kharif as well as a rabi crop**.

	State	Area – Million Hectares	Production (MT)	Yield – tonnes/hectare
1	Maharashtra	2.2 (43.7%)	1.8 (36.5%)	0.8
2	Karnataka	1.1 (21.9%)	1.1 (22.9%)	1.0
3	Madhya Pradesh	0.3 (5.4%)	0.6 (11.5%)	2.1
	All India	5 Mha	5 MT	1.0



- **Bajra (bull rush millet)**
- Bajra is the second most important millet.
- It is a **rainfed kharif crop** of **dry and warm north-western and western parts of the country**.

	State	Area – Million Hectares	Production (MT)	Yield – tonnes/hectare
1	Rajasthan	4.2 (57.4%)	3.8 (41.1%)	0.9
2	Uttar Pradesh	0.9 (12.5%)	1.8 (19.7%)	1.9
3	Gujarat	0.4 (5.4%)	0.9 (10.1%)	2.3
4	Madhya Pradesh	0.3 (4.2%)	0.8 (8.3%)	2.4
	All India	7.4 Mha	9.1 MT	1.2

## • Ragi

- **Karnataka** is the largest producer (73.23 per cent).
- **Uttarakhand** and **Tamil Nadu** are the other major producers.
- **rainfed kharif crop**



- **Barley**
- Grows in areas with rainfall range of 75 cm to 100 cm.
- It is grown as a **rabi crop** in the Great Plains and valleys of the western Himalayas.
- **Rajasthan** is the largest producer (40 per cent). **Uttar Pradesh** is the second largest.



## • Pulses

- Being **leguminous crops**, all these crops **except arhar** help in restoring soil fertility by fixing nitrogen from the air. Therefore, these are mostly grown in rotation with other crops
- India is the largest producer as well as the consumer of pulses in the world
- Pulses need less moisture and survive even in dry conditions.
- Major pulses that are grown in India are tur (arhar), urad, moong, masur, peas and gram.

	State	Area – Million Hectares	Production (MT)
1	Madhya Pradesh	7.5 (24.9%)	8.1 (32.1%)
2	Rajasthan	5.3 (17.8%)	3.4 (13.4%)
3	Maharashtra	4.4 (14.5%)	3.3 (13.1%)
4	Uttar Pradesh	2.3 (7.6%)	2.2 (8.8%)
5	Karnataka	3 (10.1%)	1.9 (7.4%)
	All India	30 Mha	25.2 MT

## Gram

It is a **rabi crop** and is cultivated in subtropical areas

	State	Area – Million Hectares	Production (MT)	Yield – tonnes/hectare
1	Madhya Pradesh	3.6 (34%)	4.6 (40.9%)	1.3
2	Maharashtra	2 (18.9%)	1.8 (15.9%)	0.9
3	Rajasthan	1.6 (14.9%)	1.7 (14.9%)	1.1
4	Karnataka	1.3 (12%)	0.7 (6.4%)	0.6
5	Andhra Pradesh	0.5 (4.9%)	0.6 (5.2%)	1.1
	All India	10.6 Mha	11.2 MT	1.1

### Tur or arhar (pigeon pea or recri gram)

- Tur is the second most important pulse.
- It is chiefly grown as a **kharif crop**.
- In areas of mild winters, it is grown as a rabi crop.
- It is grown as a **dry crop** mixed with **other kharif crops** like **jowar, bajra, ragi, maize, cotton, groundnut**, etc. and is seldom grown as a single crop

	State	Area – Million Hectares	Production (MT)	Yield – tonnes/hectare
1	Maharashtra	1.2 (27.7%)	1.1 (25.2%)	0.9
2	Madhya Pradesh	0.7 (14.6%)	0.8 (19.7%)	1.3
3	Karnataka	0.9 (20%)	0.8 (18.1%)	0.9
4	Gujarat	0.3 (6.1%)	0.3 (7.9%)	1.2
5	Uttar Pradesh	0.3 (6.4%)	0.3 (7.8%)	1.2
	All-India	4.4 Mha	4.3 MT	1.0



- **Cotton**
- Cotton is a **tropical crop** grown in **kharif season** in **semi-arid areas** of the country
- It requires **uniformly** high temperature (21°C to 30°C), light rainfall (**50-100 cm**) or irrigation, 210 frost-free days and bright sun-shine for its growth.
- **Deep black soils (regur-lava soil)** of the Deccan Plateau, Malwa Plateau and those of Gujarat are best suited for cotton cultivation.
- It also grows well in alluvial soils of the **Sutlej-Ganga Plain** and **red and laterite soils** of the peninsular region
- India has the largest area under cotton cultivation in the world.
- But in production it is world's **third largest** producer after **China** and the **U.S.A.**



State	Area – Million Hectares	Production (MT)	Yield – tonnes/hectare
Gujarat	2.6 (21.1%)	12.6 (36.2%)	0.8
Maharashtra	4.2 (33.9%)	6.6 (18.8%)	0.3
Telangana	1.9 (15.3%)	4.8 (13.6%)	0.4
Andhra Pradesh	0.6 (5.2%)	2 (5.8%)	0.5
Rajasthan	0.6 (4.7%)	1.9 (5.4%)	0.6
All India	12.4 Mha	34.9 MT	0.5

- **Jute**
- Jute is also called the **golden fibre** for its colour and high cash value
- Jute is the **second most important fibre crop** of India after cotton.
- Jute is a **rain-fed crop with little need for fertilizer or pesticides**.
- **Hot** (24 °C to 35 °C) and **humid climate** (minimum rainfall of 120 cm/year) with 80 per cent relative humidity.
- Highly **fertile alluvial soil** (light sandy or clayey soils).
- Jute is generally sown in February and harvested in October (crop takes 8-10 months to mature).
- **India is the world's largest producer of jute.**
- Currently India accounts for about 56% of world's jute production.
- **Bangladesh** is second largest with 25% of world's jute production

	State	Area (Mha)	Production (MT)
1	West Bengal	0.5 (71.6%)	1.6 (75.4%)
2	Bihar	0.1 (12.2%)	1.5 (14.3%)
3	Assam	0.1 (10.8%)	0.8 (8.3%)
4	Andhra Pradesh	0 (0.7%)	0.1 (0.5%)
5	Odisha	0 (0.9%)	0 (0.4%)
	All India	0.7 Mha	10.1 MT

## Sugarcane

- It has the largest value of production among all the commercial crops in India.
- It is the **first choice** of the farmers wherever geographical conditions favour its growth.
- Sugarcane is indigenous to India. It belongs to bamboo family.
- Sugarcane is predominantly a **tropical crop**.
- Requires hot (21°-27°C) and humid (75-150 cm) climate.
- (Sugar beet (tuber crop) is the **temperate alternative** for sugarcane)
- It requires **10 to 18 months** to mature depending upon the geographical conditions.

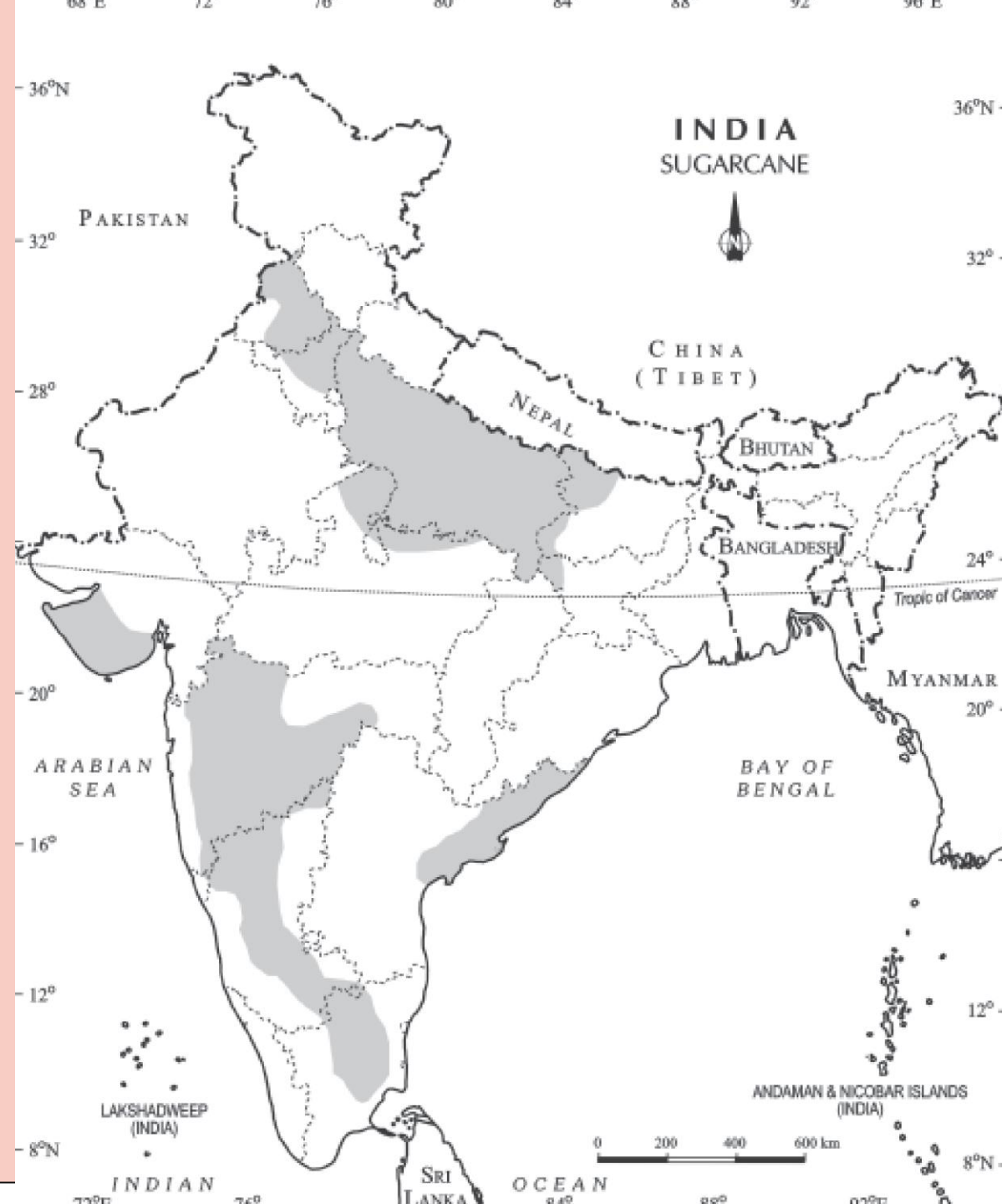
- **Sugarcane**

- By-products of Sugar Industry
- Molasses, bagasse and pressmud.
- Molasses used for alcohol and yeast formation.
- Bagasse for paper making and fuel.
- Pressmud used as **soil amendment**.
- Trash (green leaf + dry foliage) — the waste is used for cattle feed
- **India has the largest area under sugarcane cultivation in the world.**
- **But in production India lags behind Brazil – world's largest producer of sugarcane.**



- **Sugarcane Research Institute, Coimbatore** introduced the system of **ratooning** to reduce the costs of sugarcane cultivation.
- Ratoon crop is the second or any other successive crop obtained from the roots left over in the field from the first crop.





State	Area – Million Hectares	Production (MT)	Yield – tonnes/hectare
Uttar Pradesh	2.2 (47.2%)	177.1 (47%)	79.3
Maharashtra	0.9 (19.1%)	83.1 (22.1%)	92.2
Karnataka	0.4 (7.4%)	28.3 (7.5%)	80.8
Tamil Nadu	0.2 (3.8%)	16.5 (4.4%)	92.0
Bihar	0.2 (5%)	14 (3.7%)	59.2
All India	4.7 Mha	376.9 MT	79.7

- **Tobacco**
- Tobacco was brought to India by the **Portuguese** in 1508.
- Tobacco is mainly used for smoking and also for manufacturing insecticides.
- Returns from this crop are high.
- Tobacco is a plant of **tropical and sub-tropical climates**.
- It can withstand a **wide range of temperature** varying from 16° to 35°C
- Tobacco needs fairly well distributed rainfall with an annual average of about **100 cm**.
- Mainly two types of tobacco are grown in India.
- Nicotiana Tobacum 90%
- Nicotiana Rustica 10%
- India is the **third largest** tobacco producing country after **China** and **Brazil**.

**Uttar Pradesh gives the highest yield** – more than two times the national average.

State	Area – Thousand Hectares	Production (Thousand Tonnes)	Yield – tonnes/hectare
Gujarat	167 (41.8%)	375 (46.6%)	2.2
Andhra Pradesh	78 (19.5%)	177 (22%)	2.3
Uttar Pradesh	27 (6.8%)	119 (14.8%)	4.4
Karnataka	90 (22.5%)	65 (8.1%)	0.7
West Bengal	15.7 (3.9%)	26.7 (3.3%)	1.7
Telangana	7 (1.8%)	19 (2.4%)	2.7
All India	399.6 THa	805.5 TT	2.0

Gujarat	90 per cent of Gujarat's tobacco comes from Kheda and Vadodara districts.
Andhra Pradesh	Yield is higher than the yield of Gujarat and much lower than that of Uttar Pradesh

### Oilseed (Cash Crop) Crops in India

Major oilseeds include groundnut, linseed, sesamum, castor seed, rapeseed, mustard, sunflower and soyabean.

	Major oilseeds producing states	Area – Million Hectares	Production (MT)
1	Madhya Pradesh	6.6 (27%)	7 (22.2%)
2	Rajasthan	4.1 (16.7%)	6 (19.1%)
3	Gujarat	2.8 (11.2%)	5.9 (18.7%)
4	Maharashtra	4.2 (17.1%)	4.3 (13.6%)
5	Uttar Pradesh	1.1 (4.4%)	1.2 (3.7%)
	All India	24.7 Mha	31.3 MT



- **Groundnut**
- It is a **tropical crop** that requires 20°-30°C temperature and 50-75 cm rainfall.
- It is largely a **rainfed kharif crop of drylands**.
- But **in southern India, it is cultivated during rabi season as well**.

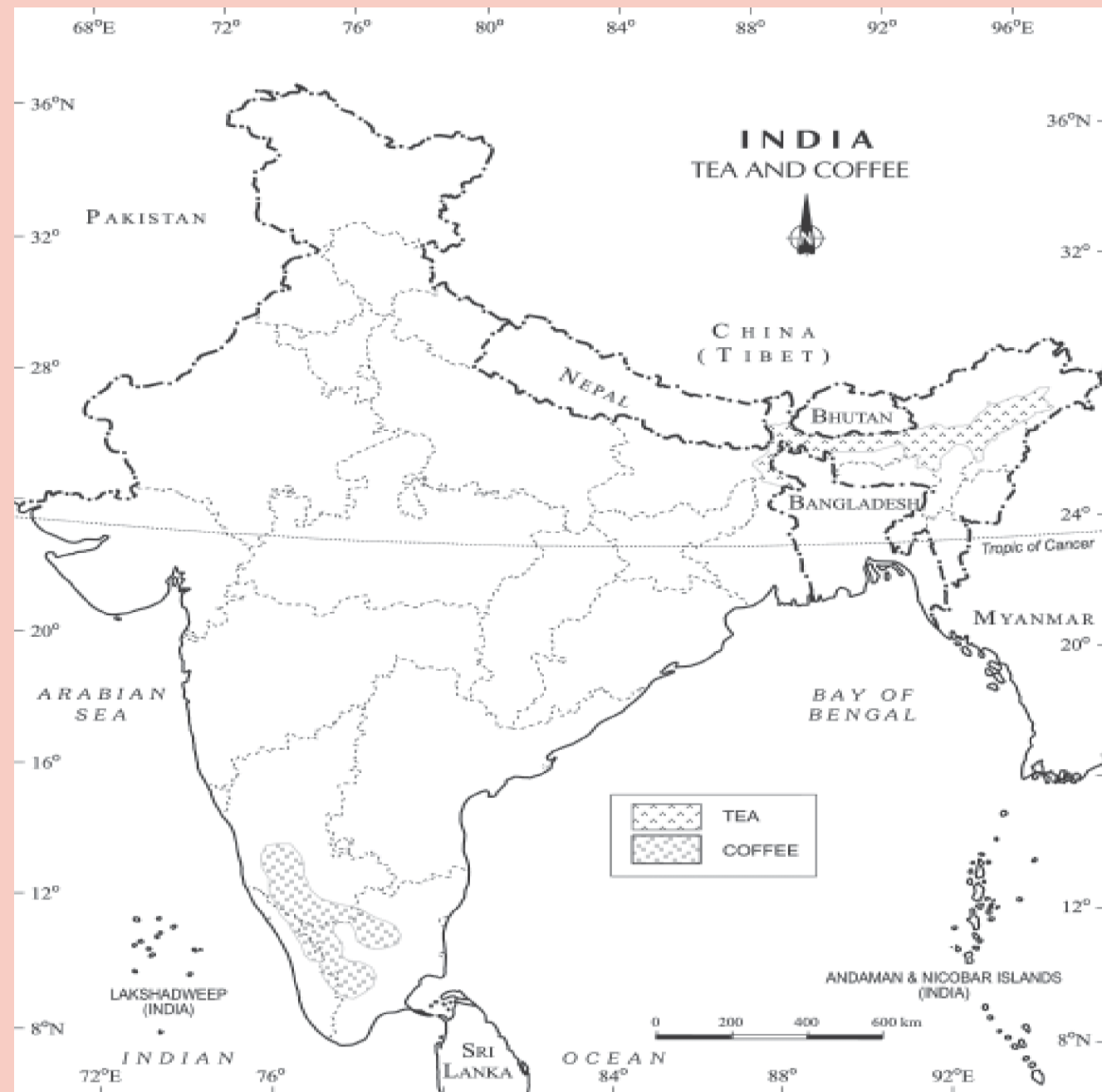
	State	Area – Million Hectares	Production (MT)	Yield – tonnes/hectare
1	Gujarat	1.7 (34.2%)	3.9 (42.9%)	2.3
2	Rajasthan	0.6 (13%)	1.3 (13.7%)	2.0
3	Andhra Pradesh	0.7 (15%)	1 (11.3%)	1.4
4	Tamil Nadu	0.3 (6.8%)	1 (10.6%)	2.9
5	Karnataka	0.6 (12.5%)	0.6 (6.1%)	0.9
	All India	4.9 Mha	9.2 MT	1.9

- **Rapeseed and mustard**
- They are mainly grown as **rabi crop** in pure or mixed form with wheat, gram and barley.
- Like wheat and gram, they thrive only in **cool climate** of the Sutlej-Ganga plain.
- **Rajasthan** (40%), Haryana (13.3%) and Madhya Pradesh are the leading producers.



- **Linseed**
- It is a **rabi crop**.
- This crop can be grown under varied geographical conditions.
- But it prefers cool (20°C) and moist climate (75 cm).
- It can be cultivated up to a height of 800 meters above sea level.
- Madhya Pradesh, Bihar (2<sup>nd</sup>), Uttar Pradesh, Chhattisgarh and Maharashtra are the main producers.
- Sunflower cultivation is concentrated in **Karnataka, Andhra Pradesh** and adjoining areas of Maharashtra.
- Soyabean is mostly grown in **Madhya Pradesh** and Maharashtra

- **Coffee**
- It is a **tropical plantation crop**.
- There are three varieties of coffee i.e. arabica, robusta and liberica.
- **Coffee Arabica (49%)** and **Coffee Robusta (51%)** are the two main varieties grown in India.
- Superior quality coffee, **arabica**, is in great demand in International market.
- Coffee plant requires **hot** (15°C and 28°C) and **humid climate** (150 to 250 cm).
- It **does not tolerate frost, prolonged drought, high temperature (>30°C)** and **strong sunshine**.
- Well drained, rich friable loams rich in humus and minerals like **iron and calcium** are ideal for coffee cultivation.
- **Baba Budan Hills , Nilgiri highlands in Karnataka, Kerala and Tamil Nadu.**
- Almost the entire production is shared by three states namely **Karnataka (71%), Kerala (22%) and Tamil Nadu (6.5%)**.
- India is the **seventh largest** producer of coffee.
- **Brazil, Vietnam, Colombia (15%) and Indonesia (7%)** are the important producers



- **Tea**
- Tea bush is indigenous to **China**.
- It was introduced the British in India in 1840.
- The first commercial tea plantations were set up in the **Upper Assam (upper Brahmaputra valley)**.
- Later on, tea plantations were set up in **Nilgiri Hills of South India, Terai along the foothills of the Himalayas** and in some places in Himachal Pradesh.
- **deep and fertile well-drained soil, rich in humus and organic matter**
- soils rich **iron** content are considered to be the best.
- It thrives well in hot (20°-30°C) and **humid climate (150-300 cm)**.
- Frequent showers **evenly distributed over the year** ensure continuous growth of tender leaves.
- **High humidity, heavy dew and morning fog** favour rapid development of young leaves.
- India is the **second largest producer of tea** in the world, next to **China**, Kenya, **Sri Lanka**, and Turkey
- **Assam (51%)** is the largest producer of tea in India.



- **Coconut**
- Coconut is a perennial crop
- Coconut is predominantly a tropical crop.
- It requires warm (25° to 30°C) and fairly moist (125 to 130 cm) climate.
- India is the third largest coconut producing country next to Indonesia and Philippines.
- It is predominantly grown under rainfed condition in **Kerala**, Tamil Nadu, Karnataka (12%) and Andhra Pradesh.

- **Cardamom**
- The entire production comes from three states viz., **Kerala (53%), Karnataka (42%) and Tamil Nadu.**
- In Kerala, the crop is largely concentrated in the **Cardamom hills.**
- India stands second after Guatemala in export of cardamom
- **Andhra Pradesh and Telangana** are the largest producers of chillies.
- **Andhra Pradesh and Telangana** (more than half) are the largest producers of Turmeric
- **Maharashtra, Karnataka, Gujarat,** Madhya Pradesh, Rajasthan, Bihar, Uttar Pradesh and West Bengal account for almost 90 per cent of onion production in the country
- The top tomato producing states are Maharashtra, Bihar, Karnataka, Uttar Pradesh and Orissa.
- The top carrot producing states in India are Haryana, Punjab, Uttar Pradesh, Bihar, Madhya Pradesh and Tamil Nadu (Nilgiris).