PARMAR SSC

PARMAR SSC

Topic:-

Agriculture



Types of Farming

1. Primitive Subsistence Farming



- It is practised on small patches of land with the help of primitive tools like hoe, dao, digging sticks, and family/community labour.
- This type of farming depends upon monsoon, natural fertility of soil, and suitability of other environmental conditions.
- It is also known as "slash and burn agriculture" or "shifting cultivation".

2. Intensive Subsistence Farming



- It is practised in areas with high population pressure on land.
- It is labour intensive farming where there is a use of high doses of biochemical inputs and irrigation to obtain higher production.
- Through "Right of Inheritance", division of land among successive generation has rendered land-holding uneconomical in size.

3. Commercial Farming



- Crops are grown and animals are reared for sale in market.
- There is a usage of higher doses of modern inputs such as High Yielding Variety (HYV) seeds, chemical fertilisers, insecticides, and pesticides, etc., to obtain high productivity.
- **Plantation Farming**: It involves farming on large areas of land to maximize output and profits Important crops grown: Tea, coffee, rubber, sugarcane, banana, etc.

Shifting Cultivation

- It is also known as "Slash and Burn agriculture".
- This type of cultivation is not good for the environment as it causes air pollution, deforestation, and the soil loses its productivity.

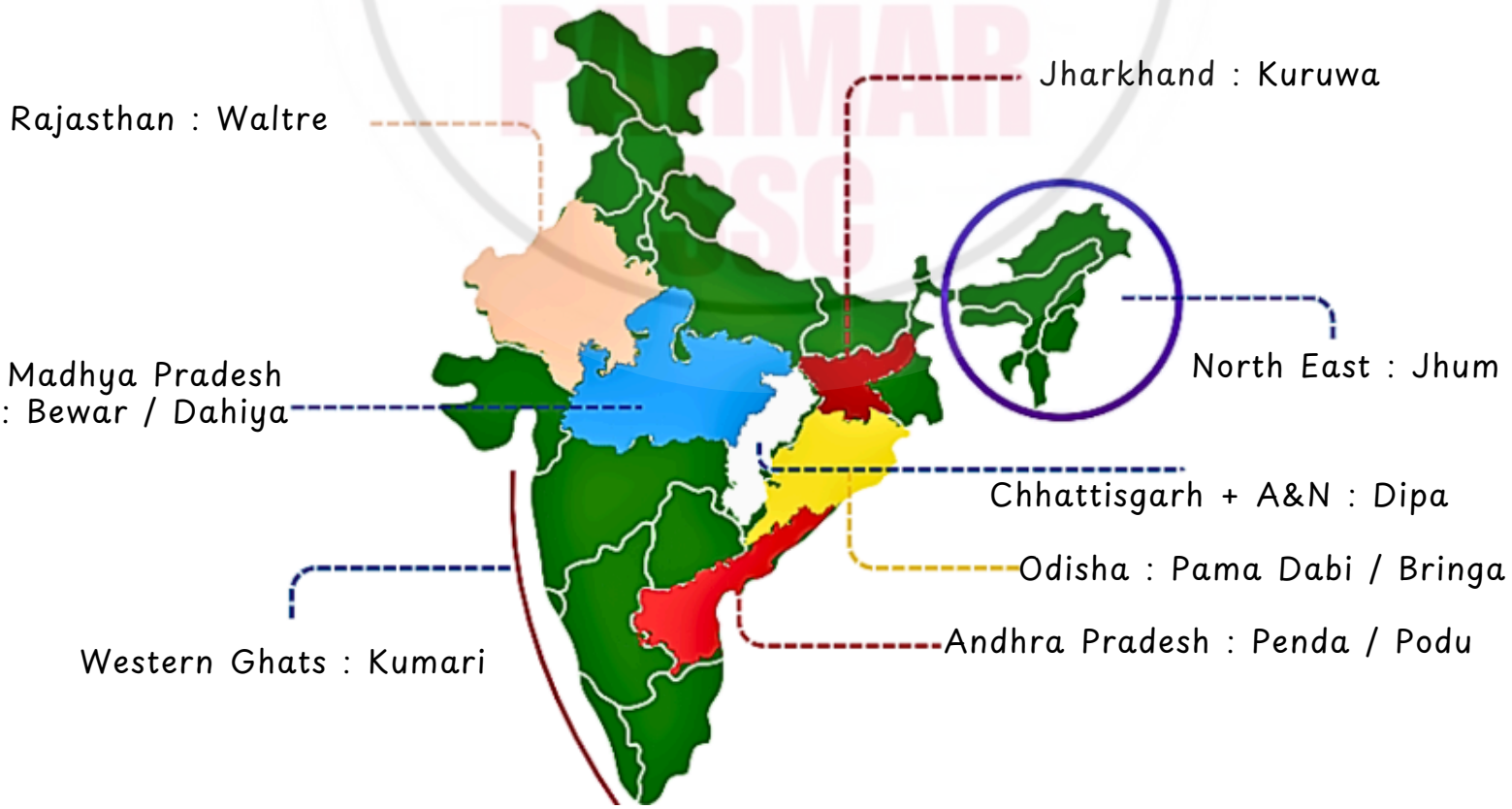




Different Names of Shifting Cultivation across the World

- Indonesia : Ladang
- Mexico : Milpa
- Sri Lanka: Chena
- Vietnam : Ray
- Brazil : Roca
- Venezuela : Konuko

Different Names of Shifting Cultivation across the India



Truck Farming

Regions where farmers specialise in vegetables only.



Mixed Farming

It involves growing crops and raising livestock on the same farm. This type of farming can help farmers generate stable income



Mixed Cropping vs Intercropping

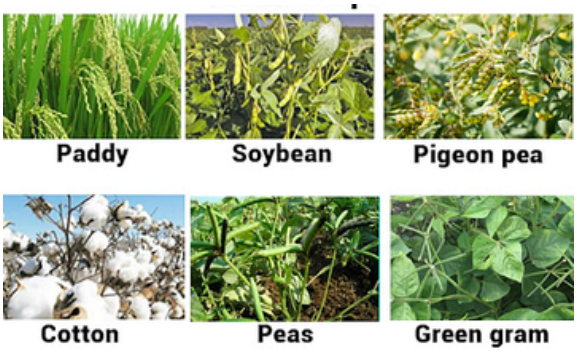
Mixed Cropping

- Mixed cropping is when two or more crops are grown on a same piece of land without following any particular pattern
- Seeds of two different crops are mixed before sowing
- This minimises the risk of crop failure

Intercropping

- Intercropping is when two or more crops are grown on a same piece of land following a specific pattern
- Seeds are not mixed and grown in a row format
- This increases the productivity of land

Different Cropping Seasons



Kharif

- Showing : July
- Harvesting : Sept-Oct
- Kharif crops are also known as Monsoon crops.
- Eg. Rice, Sugarcane, Jute, Cotton, Tobacco, Maize, Soyabean, groundnut, Millets, etc.



Rabi

- Showing : October
- Harvesting : April
- Winter rainfall is beneficial for such crops.
- Eg. Wheat, Barley, Gram, Mustard, Linseed, Pea, Rapeseed, Castor, etc.



Zaid

- Short Cropping season
- Between May and June
- Eg. Watermelon, Muskmelon, Cucumber, Fodder Crops, etc.

Some Major Crops

Rice



- Rice is also known as paddy before processing.
- India is the 2nd largest producer of rice after China.
- It is sowed in swampy areas, Methane and other gases are emitted from flooded rice fields by bacteria.
- It requires: High-temperature (>25°C) and high rainfall (>100 cm).
- In Eastern India, particularly in West Bengal, the three seasons for growing rice are: Aus (July-Aug), Aman(Dec-Jan), and Boro (March-May).

Wheat



- Rain required: 50-70 or 75 cm.
- Shown in well Drained Loamy or Clay loam soils
- Temperature required while sowing wheat is 10°C-15°C.
- During Ripening, it requires warmer temperature;21°C - 26°C.
- Winter Rainfall is helpful to wheat farming

Sugarcane



- Temperature required: 21°C- 27°C
- Rain Required : 75 - 100 cm.
- Best Yield in fertile, well drained loamy or alluvial soil.
- FRP: Fair and Remunerative Price, similar to MSP but only for Sugarcane.

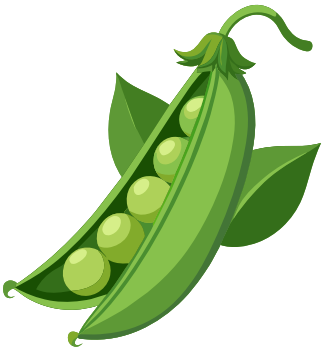
Tea



- Tea is grown in acidic, fertile, well-drained soil (laterite soil) with high organic matter that is rich in humus.
- Tea plants grow well in the shade.
- Topmost producer: China>India>Kenya.
- Topmost producer (India) Assam.

Leguminous Crops





- India is largest consumer/producer of leguminous crops.
- Leguminous plants have Nitrogen Fixing Bacteria (Rhizobium) that reside in the roots (symbiotic relationship) of these plant (they convert atmospheric nitrogen into ammonia which the plant can use as nutrient).
- E.g. Pulses, rajma (no nitrogen fixing bacteria are present in the roots of rajma plants), soyabeans (Top producer: Madhya Pradesh), etc.





Millets

- Millets are also known as Superfoods/Sri Anna.
- Topmost producer: Rajasthan.
- E.g. Bajra, ragi (finger millets), jowar (Sorghum), etc.



Oil Seeds

- India is 2nd largest producer of oil seeds after China.
- Topmost producer (India) Gujarat.
- E.g. Groundnut, coconut, mustard, sesame, cotton seed, soyabean, etc.

Horticulture Crops

- Horticultural crops are plants that are grown for food, medicine, aroma, or aesthetics. They include fruits, vegetables, ornamental plants, and more.
- India produces 13% of world's vegetables.
- It is associated with Golden Revolution.



Coffee

- Blossom showers help in growth of coffee.
- Soil required: Laterite.
- Coffee bowl of the world: Brazil (topmost producer)
- India (topmost producer: Karnataka (Baba Budan Hills)
- According to 2008 data: India produces 3.2% of the world's coffee.
- Coffee is grown in the Western Ghats of Karnataka, Kerala, and Tamil Nadu, Andhra Pradesh, Odisha, and the North East states.
- Few widely used varieties of coffee plant: Arabica, Liberica, Robusta.



Fibre Crops

Cotton



Jute



Hemp



Silk



Cotton



- Cotton is cultivated on black soil.
- It is a fibre crop and also known as "Silver Fibre".
- It requires: 210 frost free days and 6-8 months to mature.

Jute



- This fibre crop is also called as "Golden Fibre".
- Topmost producer: India (West Bengal).
- Topmost exporter: Bangladesh.
- Nor-westers are considered beneficial for the growth of jute as they bring heavy rainfall which is crucial for early stages of jute cultivation.

Hemp



- It is a fast-growing, annual plant that's cultivated for its strong, durable, and natural bast fibers.

Silk



- Silk is a natural fiber that comes from the cocoons of silkworms, which are raised in a process called sericulture.
- Silk is an animal fiber, and is one of the strongest natural fibers.

Irrigation and Its Types



1. Surface Irrigation

- Surface irrigation is an ancient and widely used method of watering crops by using gravity to distribute water across the soil surface through overland flow



2. Sprinkler Irrigation

- Sprinkler irrigation is a method of applying water to crops and land by spraying it through a system of pipes, pumps, and nozzles, mimicking natural rainfall



3. Drip Irrigation

- Drip irrigation is a method of watering plants by slowly dripping water onto the soil at the base of the plant.



4. Subsurface Irrigation

- Subsurface irrigation is a method that delivers water directly to a plant's root zone by placing a buried network of pipes or drip lines below the soil surface



5. Canal Irrigation

- Canal irrigation is a method of supplying water to fields through artificial channels, which are fed by sources like rivers or reservoirs

Hydroponics

- Hydroponics is a method of growing plants without soil, using water-based mineral nutrient solutions to deliver nutrients directly to the roots








Green Revolution



- Green Revolution first began in Mexico and Latin America (from 1940-1960).
- The term "Green Revolution" was given by: William S. Gaud.
- Father of Green Revolution (world): Norman Borlaug (USA)→ he received Nobel Peace Prize in 1970 for his work in developing High Yielding Varieties (HYVs) of wheat.
- Father of Green Revolution (India): M. S. Swaminathan (received Bharat Ratna in 2024).



Phases of Green Revolution in India

- Green Revolution was introduced in India in two phases.

1st Phase

- Time Period: Mid 1960-1970.
- The first phase was when the use of High-yielding variety (HYV) seeds was limited to wealthier states like Punjab, Andhra Pradesh, and Tamil Nadu and it was also limited to rice and wheat.
- During the Third Five Year Plan (1961-1966): CACP (Commission for Agricultural Costs and Prices), FCI (Food Corporation of India) were established in 1965.
- In July 1968, Indira Gandhi released a special stamp called the "Wheat Revolution" to mark the progress of the Green Revolution in India.
- IR8 (Miracle Rice): A HYV seed of rice developed by International Rice Research Institute (IRRI) which was introduced in Philippines and India.

2nd Phase

- Time Period: Mid 1970-1980
- The second phase was when HYV technology spread to more states and crops.
- This phase focused on increasing agricultural productivity, food security and on holistic development in agriculture.
- The second phase was successful in increasing food production and reducing the dependence on food imports.
- The headquarters of the Second Green Revolution (SGR) cell is located at the ICAR-RCER (Indian Council of Agricultural Research-Research Complex for Eastern Region) in Patna.

- Under PL-480 Scheme, India used to import HYV seeds of wheat from Mexico, USA before Green Revolution.
- Father of Wheat Revolution: **Dr D. S. Athwal**.
- He developed a new variety of wheat known as Kaliyansona im 1967.

Drawbacks of Green Revolution

- Intensive irrigation practices depleted groundwater levels in many regions.
- It significantly contributed to increased soil alkalinity due to the widespread use of chemical fertilizers, particularly nitrogen-based ones, which raised the pH level of the soil.
- It led to an increased disparity between farmers with large landowners and wealthier farmers benefiting disproportionately as compared to small and marginal farmers.
- It benefited more to farmers who had access to land, capital and technology and it also led to the displacement of tenant cultivators in many cases.

Genetically Modified Crops

- These are crops/plants that have had their DNA modified using genetic engineering techniques.
- E.g. Bt brinjal, Bt cotton.







White Revolution

- White Revolution is also known as "Operation Flood".
- Launched in: 1970 → led by Amul (a brand owned by Gujarat Cooperative Milk Marketing Federation (GCMMF)}
- Father: Verghese Kurien (Autobiography: "I Too Had A Dream"; "The Man Who Made Elephant Dance").

Blue Revolution

- Father: Hiralal Chaudhuri and Arun Krishnan.
- It was a program to increase fish production and aquaculture in a sustainable way.





Yellow Revolution

- Father: Sam Pitroda
- The Yellow Revolution was an agricultural program in India that increased the production of edible oilseeds.

Note : Agriculture Census is conducted at an interval of 5 years.

Some Important Revolutions

1. Black Revolution : Petroleum
2. Blue Revolution : Fish
3. Brown Revolution : Leather
4. Golden Revolution : Fruits/Honey
5. Green Revolution : Food Grains
6. Grey Revolution : Fertilizer
7. Pink Revolution : Onion/Sharing
8. Red Revolution : Meat/Tomato
9. Silver Revolution : Egg/Poultry
10. White Revolution : Milk
11. Yellow Revolution : Oil Seeds
12. Evergreen Revolution : Overall Development



Type of Culture

Vegetable Farming	Horticulture
Silk Rearing	Sericulture
Bee Keeping	Apiculture
Fish Farming	Pisciculture
Flower Farming	Floriculture
Rearing aquatic plants and animals	Aquaculture
Cultivation of grapevines	Viticulture / Viniculture
Bird Farming	Aviculture
Forestry	Silviculture

Cultivable Land	→	Land that is suitable for farming
Fallow land	→	Cultivable land left uncultivated for a period
Current Fallow	→	Fallow land left for led than or equal to one year
Fallow other than current fallow	→	Fallow land left for greater than 1 year and less than 5 years
Cultivable Wasteland	→	Cultivable land left for more than five years
Barren and Wasteland	→	Land not suitable for cultivation

Some Extra Facts

Carbon sequestration

Carbon sequestration is the process of capturing and storing atmospheric carbon dioxide to reduce its concentration in the atmosphere and mitigate climate change

