8 th Chapter 12

Agricultural Sector and Innovative Trends

1. Importance of Agriculture
   - Agriculture is one of the oldest and most important sectors of the economy.
   - **Food Security:** Provides food for people and fodder for livestock.
   - **Employment:** A major source of employment in the country.
   - **Raw Materials**: Supplies raw materials for industries.

2. Write any four Factors Influencing Cropping Systems

The selection of crops depends on various factors:

- **Natural Factors**: Nature of soil, climate, topography, and availability of water.
- **Economic Factors**: Price of products, farmer's income, and land area.
- **Social Factors**: Diet, education, and social environment.
- **Infrastructure**: Irrigation, electricity, transportation, markets, and seeds/fertilizers

3. Cropping Systems

The order in which crops are cultivated on a farm during a specific period is called a cropping system.

A. Monocropping

- **Definition**: Cultivating only one crop at a time on a farm.
- **Features**: Mainly aimed at export. Planting and harvesting are easy.
- **Disadvantage**: Increases the risk of pest attacks.
- **Examples**: Rubber, Tea, Tapioca.

B. Multiple or Poly Cropping - Cultivating two or more crops on a single plot to increase total production and income.

- **Mixed Cropping:** Cultivating two or more crops simultaneously without maintaining spacing (e.g., Maize & Groundnut).
- **Inter Cropping:** Cultivating another crop between the main crop in a specific pattern (e.g., Groundnut & Plantain).
- **Sequence Cropping:** Cultivating a short-term crop immediately after harvesting the main crop (e.g., Pulses after Paddy).
- **Relay Cropping:** Growing a second crop before harvesting the first crop.(eg: Cultivating vegetables before harvesting plantain)
- **Crop Rotation:** Cultivating crops of different plant families on the same field in succession. It increases soil fertility and controls pests (e.g., Peas after Paddy)
- **Multi-Tier Cropping:** Cultivating crops of different heights and root depths simultaneously to use sunlight and soil effectively (e.g., Coconut, Pepper, and Ginger)

C. Ratoon Cropping

- Leaving the roots/lower part of a crop during harvest to let it grow again (e.g., Sugarcane).
- The advantage of this system is that the crop is harvested again from the same crop.

4. Innovative Trends in Agriculture (Modern technology is used to increase productivity and reduce challenges.)
    - **Drones**: Used for sowing seeds and spraying fertilizers/pesticides efficiently.
    - **Rain Shelter Farming**: Using transparent polythene sheets as a roof to protect crops from rain while allowing sunlight. Useful for year-round vegetable cultivation.
    - **Polyhouse Farming (Greenhouse):** Completely covered with polythene sheets to artificially create a suitable environment (controlling heat/cold) for plants.
    - **Precision Farming:** Providing crops with the exact quantity of water and nutrients at the right time.
    - **Digital Farming:** Using Artificial Intelligence (AI), Mobile Apps, and Data analysis in farming.
    - **Vertical Farming**: Growing crops in vertically stacked layers. Suitable for cities with limited land.
    - **Organic Farming**: Farming using bio-fertilizers and green manure, completely avoiding chemical fertilizers and pesticides.

5. Challenges Faced by the Agricultural Sector
    - Most of the small-scale farmers who use chemical fertilizers and pesticides cannot afford the high price of chemical fertilizers.
    - The inability to find a market for agricultural products, lack of capital, and increased production costs adversely affect farmers.
    - Neglect of crop rotation, Crop failure and loss, Agricultural debt, Lack of basic infrastructure and Climate change.

6. Agro-based Small-Scale Industries:
    - Industries that use agricultural products as raw materials.
    - Industries with investment up to 10 crores and an annual turnover of less than fifty crores. (e.g., Food processing units).
    - **Cottage Industries:** Small units run by individuals or families using traditional methods and low investment (e.g., Weaving, Bamboo products).

7. **Handloom Sector** : A major traditional industry providing large-scale employment after the coir industry.

8. **Agricultural Markets** : A system for buying and selling agricultural products to ensure fair prices for farmers.

9. Where agricultural products are taken for sale?
    - To Retail Traders , To Digital Markets , For Exports and To Agro-based Industries

10. Types of Markets:
    - **Organised Agricultural Market :** that operate according to the rules and regulations of the government. They operate mainly according to the APMC rules.
    - **Unorganised Agricultural Market**. Those that operate without a specific structure.
    - **Rural Primary Markets (Haats):** Village markets where farmers sell directly to consumers without intermediaries.
    - **Wholesale Markets (Mandis):** Large markets in towns/cities where farmers sell to wholesale traders.
    - Organized Markets: Operate under government rules (e.g., APMC - Agricultural Produce Market Committee).
    - E-Nam: National Agriculture Market (Online platform) for selling products anywhere in India.
    - VFPCK: Vegetable and Fruit Promotion Council Keralam.

11. Challenges Faced by the Agricultural Marketing
    - Inadequate transport facilities , Lack of access to loans , Insufficient market information , nadequate storage facilities , Import policies , Exploitation of intermediaries