

Visit: iibf.info

AGRICULTURE ECONOMY

IIBF RURAL BANKING



AGRICULTURE ECONOMY

- 'Agricultural economy' is related to all activities involved in the **production, distribution, exchange, and consumption of goods of agricultural origin, i.e., plant and animal**
- The performance of the agricultural sector influences the growth of the Indian economy.
- **The rural sector (including agriculture) is being increasingly seen as a potential source of domestic demand; a recognition, that is shaping the marketing strategies of entrepreneurs wishing to widen the demand for goods and services.**

STRUCTURE AND CHARACTERISTICS OF INDIAN AGRICULTURE

- The agriculture economy involving the production, distribution, exchange, and consumption of **cereals, pulses, oilseeds, fruits, vegetables, other crops, livestock, fish, and forest products** is significant for the Indian economy.
- Indian agriculture is diverse.
- A multitude of crops is grown in various climatic zones ranging from temperate to tropical in a variety of soil types such as **alluvial, vertisol, alfisol, laterites, and desert soil.**
 1. Alluvial soils are widespread in India. These are in Assam, West Bengal, **Uttar Pradesh, Orissa, Tamil Nadu, Gujarat, Madhya Pradesh, Punjab, Haryana, and Kerala.**
 2. Vertisols (black soils) are found in **Maharashtra, parts of Madhya Pradesh, Andhra Pradesh, Gujarat, and Tamil Nadu.**
 3. Alfisols (red soils) are seen in parts of **Tamil Nadu, Karnataka, Goa, Daman, and Diu, south-eastern Maharashtra, and easter**

Andhra Pradesh, Madhya Pradesh, Orissa, and Parts of Bihar, Bengal, and Uttar Pradesh.

4. Lateritic soils are found in the hills of **Karnataka, Kerala, Madhya Pradesh, Orissa, Maharashtra**, West Bengal, Tamil Nadu, and Assam. Desert soils form a large part of Western Rajasthan and parts of Punjab and Haryana.
- Cropping activities are on throughout the year in India depending on the availability of moisture. In northern India, there are two main seasons - **Kharif (July to October) and Rabi (October to March) from July to June.**
 - The season between March and June is known as Zaid and is a minor season. Indian agriculture is largely monsoon-dependent. About 90 percent of annual rainfall is received during the monsoon season, i.e., **months of June to September.**
 - Livestock raising or animal husbandry is an important component of agriculture in India. **The main livestock is cows, bullocks, buffaloes, sheep, goats, pigs, camels, and poultry.** These animals provide **milk, wool, meat, eggs, hides and skins, dung, bones**, hooves, and draught power.

Share of Agriculture in GDP

- In 2020, there were around a 501million workers in India. Out of **which 26.18 percent were in the industry sector, 41.19 percent were in the agricultural industry, and 32.33 percent were in the service sector.**
- Agriculture sector to **grow 3.9 percent in 2022.**

Small Holder Agriculture

- One important characteristic of **Indian agriculture is related to the small size of holdings. The average size of farms has been declining over time.**
- **The main factors of production are land and labor.** Family labor is used in a significant proportion. The component of subsistence and semi-subsistence on small farms is large; however, **these farms are not a homogeneous group.**
- they have in common **strong linkages between farm and family that influence their production and household consumption responses.**

Risky Farming Environment

- Agriculture in India is affected by the **uncertain natural environment.**
- **The biological foundation, of agricultural production,** poses special problems in predicting output levels.
- The origins of risk are pervasive natural, economic and socio-political. **Natural risks originate from climatic factors such as rainfall, its level, and distribution.**

Land Use

- **India has a geographical area of about 329 million hectares, of which reporting area is about 305 million ha.**
- Forests accounted for nearly **23percent of reporting area at the county level which is lower than the National Forest Policy norm of about 33 percent.**
- **Non-agricultural uses of land aggregate about 8.2 percent of all reporting areas** at the national level. This is a manifestation of urbanization and industrialization occurring in the country.
- Agricultural land in India was reported **at 60.43 % in 2018**



Land Distribution

- One important aspect of Indian agriculture related to population and land resources is the distribution of farms
- 2 hectares are small farms. **About 81 percent of operational holdings are less than 2 hectares, i.e., small**
- As many as **95.1% of Indian farmers are called “small, marginal, and semi-medium”**, meaning they own up to **2.47, 4.94, and 9.88 acres of land**, respectively. These farmers own 68.2% of cultivated land, while 4.9% of **“medium and large”** (owning up to 24.71, or more than 24.71 acres, respectively) **farmers own 31.8% of cultivated land**, according to the 2011-12 agriculture census.

Irrigation

- **Uncertainties about rainfall and the relatively short duration of rains** make irrigation the most **important tool** for agricultural development in India.
- **About 48.3 percent of operational holdings were irrigated in 2013.** Among different sources of irrigation, canals covered 28 percent of the total area irrigated, tube wells irrigated nearly 40 percent and wells irrigated another 18 percent.
- The Government of India has taken up **irrigation potential creation through public funding** and is assisting farmers to create potential on their farms.
- Substantial irrigation potential has been **created through major and medium irrigation schemes**.

Cropping Pattern

- India is the **world's second-largest producer of both rice and wheat**.
- Cultivated on 45 million hectares in Kharif and rabi seasons, **rice production has consistently risen over the years from 104.4 million tonnes (mt) in 2015-16 to 117.9 mt in 2019-20**.
- **Wheat, a rabi crop**, is planted on around 30 million hectares and its harvest stood at **107.2 mt in 2019-20, up from 92.3 mt five years ago**.
- Grain mono-cropping — **the cultivation of rice and wheat in an unbroken chain season after season — in major growing states such as Punjab and Haryana over the last 20-30 years is inflicting enormous invisible costs**.
- In the absence of scientific crop rotation, soil health has deteriorated.
- Encouraged by the free power supply, reckless drawing of groundwater for irrigation has resulted in the water table going down to alarmingly low levels.

Crop Production, 2020-21

- **Foodgrains** –316.06 million tonnes.
 - Rice –127.93 million tonnes.
 - Wheat –111.32 million tonnes.
 - Nutri / Coarse Cereals –49.86 million tonnes.
 - Maize –32.42 million tonnes.
 - Pulses –26.96 million tonnes.
 - Tur –4.00 million tonnes.
 - Gram – 13.12 million tonnes.
- **Oilseeds** –37.15 million tonnes.
- **Groundnut** – 9.86 million tonnes.
- **Soyabean** –13.12 million tonnes.
- **Mustard** –11.46 million tonnes.



- Sugarcane – 414.04 million tonnes.
- Cotton –34.06 million bales (each of 170 kg).
- Jute & Mesta –9.57 million bales (each of 180 kg).

Allied Agricultural Activities

- Broadly agriculture sector includes allied activities like **livestock, forestry, and fishery.**
- The livestock sector contributed over 4.11percent to the total GDP during 2022 and contributes about 25.6per cent GDP from total agriculture and allied activities.
- **Forests formally contribute 1.7 percent to India's GDP.** India produces a range of processed forest (wood and non-wood) products ranging from sawn wood, panel products, and wood pulp to bamboo, rattan ware, and pine resin.
- The fisheries and aquaculture production contributes **around 1% to India's Gross Domestic Product (GDP) and over 5% to the agricultural GDP.**

ROLE OF AGRICULTURE IN ECONOMIC DEVELOPMENT

- **Rural Development and Agricultural Development**
Since the agricultural sector provides means of livelihood to most rural people, the development of agriculture is crucial for rural development.
- **Role of Agriculture in Economic Development**
The developmental role of agriculture can be **summarized as a provider of food, employment to a large number of people, a market for non-agricultural goods, and a source of foreign exchange earnings.** These are termed product contribution, factor



contribution, market contribution, and foreign exchange contribution respectively.

- **Product Contribution**

Agriculture contributes to the Gross Domestic Product, which is a measure of total output produced in an economy during a year.

Raw materials from the agriculture sector are used in several manufacturing industries like food processing, beverages, tobacco, textiles, and leather industries, to name only a few.

- **Factor Contribution**

The factor contribution of agriculture to economic development is resource transfers – **labor and capital - to other sectors.**

- **Market Contribution**

The agricultural sector, because of its large size, **is the major market for domestic industrial products. Farmers spending on industrial goods both consumer goods such as clothes, furniture, household utensils, building material, and other goods such as fertilizers, pesticides, tools, and implements represent one aspect of agriculture's market contribution to general economic development through sectoral diversification.** The agricultural sector's market contribution also includes the sale of food and other agricultural products to non-agriculture sectors

- **Foreign Exchange Contribution**

Agriculture contributes to foreign exchange earnings by exporting its surplus. Diverse agro-climatic conditions in India are conducive to growing various crops almost round the year.

AGRICULTURE - INDUSTRY LINKAGE

- This broader view of agriculture in terms of agri-business is related to the concept of the inter-industry linkage which **describes inter-sectoral interdependence.**
- Two kinds of linkage are identified - backward and forward. Backward linkage is measured in terms of the ratio of intermediate inputs purchased from other industries and the total output of a particular industry.
- Forward linkage is measured in terms of the ratio of intermediate output sales to other industries and total sales including final consumer sales of a particular industry. Total linkage is defined as the sum of forwarding and backward linkage.
- These inter-industry linkage coefficients are usually based on a technique known as input-output modeling. **The usual assumption in the input-output analysis is that linkage effects in production, employment, and income are in response to an autonomous change in demand.** Thus, economic growth and development are demand-driven in input-output models depicting inter-industry linkages.

ISSUES IN ECONOMIC DEVELOPMENT

- **Agriculture vs Industry:** In most economies, incomes from the non-agricultural sector are much higher than incomes from the agricultural sector. In economically developed economies, industry and services sectors dominate the economy. **many conclude that industrialization is the cause rather than the effect of economic development. yet the role of agriculture remains important as it is less capital-intensive and employs a large number of people.**



- **State Versus Market:** Important elements of a market economy include an outward orientation in trade, easy entry and exit for firms, and encouraging competition. Markets work best in a stable macroeconomic environment in which taxes are predictable, prices are stable and the government budget is balanced. Therefore, a conducive policy environment is necessary for the efficient functioning of markets.
- **International Trade:** The issue relating to international trade is concerned with import substitution versus export promotion.

RESOURCES IN AGRICULTURE

- **Land:** The quality of land depends on soil quality, nutrient level, and water holding capacity.
- **Labour:** The main characteristics of labor are that its supply cannot be rapidly increased or reduced and division of labor is associated with production efficiency. Workforce agriculture in India includes cultivators, agricultural laborers, and those engaged in livestock, forestry, fishing, plantation, and allied activities.
- **Capital:** Agricultural capital broadly includes money invested in livestock, machinery, and buildings. It has two components - working and fixed capital.
- **Entrepreneurship:** The role of entrepreneurship or management is to coordinate and put to use various factors of production to achieve specific goals.
- **Resource Productivity and Efficiency:** The concept of productivity and efficiency are related to resource use and are useful for comparison and improvement in resource use efficiency.

TECHNICAL CHANGE IN AGRICULTURE

- Production of agricultural output requires, apart from land, a **variety of resources such as seed, water, fertilizer, air, sunshine, and energy**. Some of these inputs like air and sunshine are free but other inputs are to be organized by farmers.
- Technical change can be embodied or disembodied. **Embodied technical change refers to the introduction of new technology in the form of physical inputs like the use of a tractor or other machines. Disembodied technical change is improved managerial ability due to better information on weather and prices.**

Seeds

- The agricultural season begins with soil preparation. However, the first decisive step that, Farmer takes relates to sowing. **The availability of quality seeds (among other factors) makes a critical difference to our growth. in India, more than four-fifths of the farmers rely on farm-saved seeds, leading to a low seed replacement rate.**
- Indian seeds program recognizes Three kinds of seed generation, viz., **breeder, foundation, and certified seeds.**

Fertilizer

- Fertilizers are **chemical substances supplied to the crops to increase their productivity**. These are used by the farmers daily to increase the crop yield. **The fertilizers contain the essential nutrients required by the plants, including nitrogen, potassium, and phosphorus.**
- The Government has taken several measures to improve fertilizer application in the country



- To encourage the balanced use of fertilizers, a new concept of customized fertilizers has been introduced. **These fertilizers are soil-specific and crop specific. Organic fertilizers, namely city-based compost and vermin compost, and bio-fertilizers.**

Impact of Technological Change

- At the macro level, technological change in agriculture has two important effects on an economy. **First, it increases the food supply and so prices decline**, thus improving consumer welfare. Second, **it makes it possible to produce more with relatively less labor thus freeing labor for the development of another sector in the economy.**
- Indian farmers were receptive to the **new seed fertilizer technology, known as the green revolution. due to low coverage of assured irrigation, benefits did not relate in large areas where rain-fed crops are grown.**
- The ill effects of the green revolution were degradation of soil and polluted waterways, due to the high level of use of chemical fertilizers, pesticides, and heavy machinery for decades.

CONSTRAINTS TO AGRICULTURAL DEVELOPMENT

The main constraints identified are related to **land ownership and operation, capital formation, marketing, organization and research, and extension.**

Land Ownership and Operation

Ownership of land is **regarding the legal title of land and operation relates to the actual cultivation of land.** The difference between ownership and operation of land originates due to land tenancy.



Land Reform and its limitation

- **land reforms include the abolition of intermediaries, tenancy reform, fixation of land ceiling, consolidation of land holding, and cooperative management of land.** Abolition of intermediaries is about the abolition of the Zamindari system in the 1950s when Zamindars were evicted from land ownership and the land was legally given to tillers of the land.
- **Various states in India have enacted tenancy reform legislation to protect tenants. These include regulation of rent; security of tenure and confirmation of ownership of these legislations.** An important component of land reform was the fixation of a ceiling or an upper limit on land holding so that the state can distribute the surplus land to the landless. And the limit is 2000 square meters.
- Land ceiling and tenancy laws restrict the full exploitation of technological change.

Capital Formation

- **Investment or capital formation has two major components - private investment and public investment** Private investment may be considered behavioral, whereas government investment is a policy variable private investment takes various forms such as land improvement, agricultural implements, and live stocks, public investment may be in the form of large-scale irrigation system, power generation, infrastructure development, and research and extension.
- **Capital formation is essential for capacity building and is a key to growth, development, and sustainability,** Therefore, a decline in capital formation warrants a serious study and may act as a constraint to agricultural development if corrective measures are not taken in time.

Marketing

Marketing of Produce

- The prices farmers receive for their produce depend on the organizational and operational efficiency of the market structure.
- Agriculture is a seasonal activity, the arrival of commodities in the market in bulk leads to a fall in prices.
- This necessitates the building up of adequate on-farm storage and extended storage facilities in market yards to avoid a slump in prices that can come due to heavy arrivals.
- The absence of adequate and efficient transportation facilities would tend to depress the prices of agricultural commodities in surplus areas despite high ruling prices in deficit areas.

Agricultural Input Marketing

Main agricultural inputs are water (irrigation), fertilizer, power, and credit. Adequate and timely availability of these crucial inputs is essential for agricultural development.

Organization

An organization is defined as a collection or group of individuals bound by some common purpose to achieve certain given objectives. Under the broad theme of organization, the following three issues are important:

- I. designing appropriate organizational structures;
- II. facilitating desirable human behavior within the organization; and
- III. setting a plan to achieve the goals.

Characteristics of a Good Organization

A good organizational structure should have a high degree of professional competence, **meaningful participation of people in**



planning, implementation, monitoring, and impact assessment, a balanced blend of macro and micro planning (vertical integration in

planning), inter-sectoral plans (horizontal integration in planning), a delivery system that takes the benefits to the target groups.

Farmers' Organization

Agricultural development is a joint responsibility of **the public, corporate, co-operative, and private initiatives**. Effective organizations of farmers can contribute to this in a significant manner. Indian villages have an autonomous democratic institution, the village panchayat.

EMERGING ISSUES IN AGRICULTURE

The concluding section deals with some emerging issues in agriculture. These issues are broadly classified into four categories:

- a. agriculture and environment,
- b. agriculture and international trade,
- c. agricultural diversification and food security and
- d. policy reforms.

Agriculture and Environment

Some of the environment-related problems that have become notable are:

- I. decline in the water level,
- II. water logging and salinity,
- III. soil erosion,
- IV. pesticide residues,
- V. aquaculture-related problems, and
- VI. deforestation and loss of biodiversity.

Environment-friendly Technology

- Research and extension efforts in the **areas of water-saving devices**,
- management of **salt-affected and waterlogged soils**,
- watershed development and integrated pest management have been initiated in various institutions Results of these researches are visible, **for example, drip and sprinkler method of irrigation was found useful in saving water up to 66 percent as reported in some water-scarce areas.**

Export Competitiveness of Agriculture

- from an empirical standpoint on the assessment of export competitiveness, it is important to know about the **comparative cost advantage of important suppliers of the world market. Also important is the knowledge about price responsiveness, taste, and preferences of people in major importing countries.**
- it may be important to assess the role of the domestic market in absorbing price fluctuations in the world market regarding export commodities. **India has a comparative advantage in respect of some of the foodgrains, horticultural products, floricultural products, and marine products.**

Agricultural Diversification and Food Security

- Diversification within agriculture is seen in terms of sub-sectors like animal husbandry, forestry, and fisheries becoming significant relative to crop production.
- Diversification within crop production is seen in terms of the increasing importance of non-food grain crops.

Crop Diversification

- Crop diversification in India is generally viewed as shifting from **traditionally grown less remunerative crops to more remunerative crops.**
- To promote water use efficiency and sustainable agriculture and ensure higher incomes for farmers, the Government is implementing the Crop Diversification Programme in the original green revolution States viz., **Punjab, Haryana, and Western Uttar Pradesh as a sub-scheme under Rashtriya Krishi Vikas Yojana since 2013-14 to shift area under paddy cultivation towards less water-intensive crops such as oilseeds, pulses, and Nutrii-cereals, etc.** The program also focuses on shifting areas under **tobacco cultivation to alternative crops in States viz. Andhra Pradesh, Bihar, Gujarat, Karnataka, Maharashtra, and West Bengal among other tobacco-producing states.** The Survey observes that the government is also using price policy to signal farmers to diversify their crops.
- Crop diversification refers to a larger crop mix and is inspired by two factors - income augmentation and risk management. Of late, **the income increasing factor has become more prominent in determining Crop diversification due to the increased role of market forces.** At the aggregate level, crop diversification is observed in terms of changes in the mix of crops. These changes can be examined through the growth rates of the area under various crops.

Food Security

- **Food security** refers to ensuring adequate food supply to people, especially those who are deprived of basic nutrition. Food security has been a major concern in India.



- According to UN-India, there are nearly 195 million undernourished people in India, which is one-fourth of the world's hunger burden.
- Approxly, **43% of children in India** are chronically undernourished.
- **India ranks 71 out of 113 major countries in terms of food security index 2020.**
- The available nutritional standard is 100% of the requirement, India lags far behind in terms of quality protein intake at 20% which needs to be tackled by making available **protein-rich food products such as soybeans, lentils, and meat, eggs, dairy, etc. at affordable prices.**

National Food Security Mission (NFSM)

- An objective of the National Food Security Mission is to increase the production of certain crops through area expansion and productivity enhancement in a sustainable manner in the identified districts of the country.
- National Food Security Mission (NFSM) is a Centrally Sponsored Scheme launched in **2007** based on the recommendations of the **agriculture sub-committee of the National Development Council (NDC)**.
- **NFSM includes Rice, Wheat, and, pulses.**
- NFSM-coarse cereals and Commercial crops viz., **Cotton, Jute, and Sugarcane** have been included under revamped NFSM. **From 2014-15, NFSM was implemented in 623 districts in 28 states. NFSM-Rice was implemented in 206 districts in 25 states. NFSM-Wheat was implemented in 126 districts in 11 states.**