Agriculture — I

Syllabus

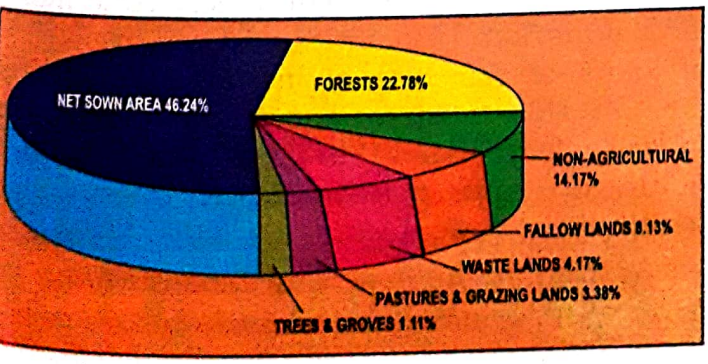
Agriculture

Indian Agriculture – importance, problems and reforms.

Types of farming in India : subsistence and commercial: shifting, intensive, extensive, plantation and mixed.

The word 'agriculture' has been derived from two Latin words, *'ager'* meaning 'land' and *'culture'* meaning 'cultivation'. Agriculture is thus, defined as *the cultivation of the soil in order to grow crops and rear livestock.* The essential purpose of agriculture is the production of food from land for human or animal consumption. India is primarily an agricultural country as two-thirds of its population depends on agriculture. Agriculture is the mainstay and the backbone of India's economy. According to the Ministry of Statistics and Programme Implementation agriculture and allied sector accounts for:

- 15.87 per cent of India's GVA (Gross Value Added).
- 17.1% of its Gross Domestic Produce (GDP).
- 13% share of total value of export.
- employment to 58% of labour force either directly or indirectely.



The vast expanse of level land, rich soil, wide climatic variations suited for various types of crops, ample sunshine and a long growing season provide the necessary conditions for the development of agriculture in India. However, the agricultural output depends on monsoon as nearly 55 per cent of the area sown is dependent on rainfall.

IMPORTANCE OF AGRICULTURE

Agriculture plays a significant role in the Indian economy in the following ways:

(i) It provides food for our expanding population and fodder for our livestock.

(ii) It generates working capital for non-agricultural development, supplies raw materials for agro-based industries like textile, sugar, food processing, vanaspati, *etc.*

(iii) It provides a large part of the market for industrial goods, especially the farm inputs like fertilizers, pesticides, implements, machinery, *etc.*

(iv) It accounts for a substantial portion of India's exports.

(v) It provides employment to millions of people.

INDIAN AGRICULTURE: PROBLEMS

Despite a number of efforts being made for agricultural development, agricultural yield in India is still low in comparison to the developed countries of the world. This is caused by the interplay of several factors. These factors can be categorised into four groups : (i) environmental; (ii) economic; (iii) institutional; and (iv) technological.

I. Environmental Factors

1. Unreliable Rainfall: Indian agriculture is dependent to a large extent on the monsoons, which are uncertain, irregular and unequally distributed. Nearly 55 per cent of the net sown area continues to depend on rainfall rather than irrigation. That is why when rains fail agricultural production is badly affected, resulting in scarcity of foodgrains.

2. Lack of Irrigation Facilities: India has the largest irrigated area of the cultivated land. Yet a large per cent of the net sown area lacks irrigation facilities and is dependent on monsoon. The failure of monsoon or too much rainfall leads to crop failure.

Further, free power supply to a section of farmers encourages them to pump groundwater to grow water-intensive crops in low-rainfall areas, for example, sugarcane in Maharashtra and rice in Punjab. This unsustainable pumping of water has reduced water storage in aquifers. Consequently, many wells and tubewells have become dry. This has pushed the marginal and small farmers out of cultivation.

3. Soil Erosion: Soil erosion is not only a major cause for decreasing soil fertility but also results in loss of valuable crop land. The indiscriminate cutting of trees, overgrazing, faulty landuse practices have greatly accelerated the process of soil erosion and soil degradation. Loss of soil fertility is responsible for the low crop yields.

4. Methods of Cultivation: Though a number of crops are grown in India, their average productivity, as compared to other developed countries is quite low. This is because of old and inefficient methods and techniques of farming, inadequate irrigation facilities and inability of the farmers to purchase good quality seeds and modern equipment because of paucity of funds and lack of latest know-how and inputs.

5. Demand for Food Crops: In India, agriculture is practised by repetitive cultivation of the main two food crops—rice and wheat. These two crops deplete the soil fertility.

6. Reduction in Net Sown Area: In the recent decades, there has been a gradual shift from cultivation of food crops to cultivation of fruits, vegetables, oil-seeds and industrial crops. Rather commercial crops are preferred to cultivation of food crops. This has resulted in the reduction of net sown area under cereals and pulses. Further, the competition for land between agriculture and non-agricultural uses such as housing, *etc.*, has resulted in decline in the net sown area. This has led to a decline in food production.

II. Institutional Factors

1. Small And Fragmented Landholdings: Majority of landholdings in India are very small. These small and fragmented holdings cannot promote modern agriculture. These owners are poor. They do not generate enough income to buy new farm machinery or make heavy investment. Therefore, no scientific cultivation with improved techniques and seeds can take place.

2. Exploitation of Farmers: Land tenure system is another important reason for low productivity in India. Under the Zamindari system, the cultivator was only a tenant who could be turned out of the land. Even though Zamindari system has been abolished but its effects have not been completely wiped out. There is a section of landowners who act as absentee landlords and get their cultivation done through tenants and sharecroppers. Besides the tenants, a large number of landless labourers also exist. They are paid paltry sum as wages and have to work as bonded labourers. Thus, neither the owners nor the tenants have the urge to raise production.

III. Economic Factors

1. Subsistence Agriculture: Subsistence type of agriculture is mainly practised in India. This is because the per capita cultivable land is a mere one-fourth hectare and the farm produce is just enough to sustain the farmer.

2. Human Elements: Farmers are poor, debt-ridden and uneducated. They do not follow the modern techniques of farming, nor can they purchase modern equipment. Due to the lack of marketing facilities and non-availability of loans or fair rate of interest, the farmers are not able to invest the requisite resources in agriculture. They have no security against failure of crops; neither do they have capital to invest in agriculture.

3. Challenges Posed by Globalisation: Till early 1990's India had closed door economic

policy. It was largely felt that by opening Indian markets to the world, India's economy would improve.

This had a huge impact on Indian agriculture. Firstly, the withdrawl of the government's role in promoting agriculture, led to removing subsidies from government to the farmers. Agricultural infrastructure saw less of aid from the government. This in turn led to the plight of farmers who fell prey to corporate intrusion.

Consequently, Indian farmers are facing a big challenge from international competition. Some of the reasons for this are as follows:

(i) The cost of production of crops is increasing because of government reduction of subsidy on fertilizers.

(ii) The reduction of import duty on agricultural products have proved detrimental to the farmers.

(iii) The cost of agricultural crops in Indian market is increasing, while that of international markets is decreasing.

The prices are declining in the international market due to —

(a) Use of sophisticated farm machinery which has led to the reduction in the cost of production;

(b) Rapid progress in the field of biotechnology, which has made available highly productive seeds to the farmers; and

(c) Heavy subsidies given to the farmers in the developed countries, which result in low production cost.

IV. Technological Factors

Old and Inefficient Techniques: Most of the farmers in India use old and inefficient techniques of farming. Wooden ploughs and bullocks are still used by a large number of farmers. Mechanisation is limited. Farmers continue to use traditional methods of irrigation. With such methods, one-third of the cropped area only could be provided irrigation facilities.

REFORMS

Agriculture has been the backbone of the Indian economy. However, over the years its contribution to the Gross Domestic Product (GDP) has been declining. This is a matter of serious concern because any decline in agriculture leads to a decline in other sectors of the economy. To check this decline, the Government of India has taken a number of steps like establishment of Indian Council of Agriculture Research (ICAR), agricultural universities, veterinary services and animal breeding centres, horticulture development, research and development in the field of meteorology and weather forecast, and setting up of Kisan Call Centres to address the queries and grievances of the farmers.

The Green Revolution

The 'Green Revolution' is regarded as the greatest revolution in the country which helped to transform the economy from food scarcity to food self-sufficiency. It is the term used for describing the manifold increase in India's farm production and productivity, particularly in the case of major cereal crops like wheat consequent to the adoption of the 'New Agricultural Strategy' since the late-sixties.

The key elements of this new strategy included the following:

(i) Use of large capital and technological inputs;

(ii) Adoption of modern scientific methods of farming;

(iii) Use of High Yielding Varieties (HYV) of seeds;

(iv) Extension of irrigation facilities, particularly ground water resources;

(v) Proper use of chemical fertilizers;

(vi) Improvement in marketing and storage facilities;

(vii) Use of insecticides and pesticides;

(viii) Consolidation of landholdings;

(ix) Supply of agricultural credit; and

(x) Rural electrification.

The Green Revolution had the following impact on Indian agriculture:

(i) It enabled Indian agriculture to change from subsistence to commercial and market-oriented.

(ii) It led to the development of intensive agricultural production system that

increased production and paved the way for self-sufficiency in respect of foodgrains.

(iii) The adoption of new technology under Green Revolution created more employment opportunities in agriculture sector.

(iv) It enabled the farmers to obtain increasing returns from agriculture by greater utilisation of agricultural inputs.

(v) It increased rural prosperity.

However, at present the Green Revolution is being criticised by environmental scientists. They allege that it caused land degradation due to overuse of fertilizers and pesticides, drying aquifers and vanishing biodiversity.

Besides the Green Revolution, a number of steps have been taken to improve agricultural production in India. These include the following:

(i) Various land reforms have been introduced. Zamindari and all intermediaries have been completely abolished. According to an estimate, about 173 million acres of land were acquired from the intermediaries and consequently about two crore tenants were brought into direct relationship with the government.

(ii) Consolidation of fragmented agricultural land holdings has been an integral part of the land reforms policy of the Indian government. Legislations have been passed in most of the States to prevent subdivision and fragmentation of lands beyond a certain limit.

(iii) Creation of irrigation infrastructure and its optimum utilisation has been given greater importance. For this, an Accelerated Irrigation Benefit Programme has been started to ensure completion of irrigation projects. The other main elements of the strategy to extend irrigation benefits to more areas include promotion of better management practices, installation of sprinklers and drip irrigation systems in water scarce and drought prone areas, conjunctive use of surface and ground water and farmer's participation in irrigation water systems.

(iv) The Government announces minimum support prices for agricultural crops from time to time to ensure adequate returns to the farmers.

(v) In 2004, the Government started Kisan Call Centres. These are working in 14 different locations covering almost all the states of the country. Kisan Call Centre agents known as Farm Tele-Advisors (FTAs) respond to the queries of the farmers and provide them knowledge about the new and modern methods of farming.

(vi) The Government of India provides subsidy on fertilizers to ensure adequate availability of fertilizers to farmers at reasonable rates.

(vii) The Government is promoting balanced use of fertilizers so that soil fertility is not decreased due to excessive use of chemical fertilizers. For this soil testing laboratories have been set-up in India to check health and fertility of soil.

National Agricultural Policy

The Union Government announced the National Agricultural Policy (NAP) envisaging over 4 per cent growth rate per annum. The policy seeks to promote technically sound, economically viable, environmentally non-degrading, and socially acceptable use of country's natural resources—land, water and genetic endowment to promote sustainable development of agriculture. The salient features of this policy are:

(i) Annual growth rate of over 4 per cent.

(ii) Private sector participation to be promoted through contract farming and land leasing.

(iii) Wider coverage of future markets to minimise fluctuations in price and other risks.

(iv) Plant varieties to be protected through legislation.

(v) Animal husbandry, poultry, dairy and aquaculture to receive high priority to diversify agriculture.

(vi) New location-specific and economically viable improved varieties of agriculture and horticulture crops to be developed.