MASTER OF ARTS IN ECONOMICS

SEMESTER-II

ECO-2.4: PROBLEMS OF INDIAN AGRICULTURE

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C.D.O.E

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ECO.2.4: PROBLEMS OF INDIAN AGRICULTURE

BRIEF CONTENT

BLOCK NO	BLOCK	UNIT NO	UNIT
1	Indian agriculture problems and policies	1	Land Utilizations,
		2	Land Tenure Systems in Pre Independent India
		3	Agrarian Reforms & Structural Changes in India
		4	Agricultural Production In India
2	Agricultural finance in India	5	Agricultural finance in India, features of credit systems, types of credit, sources of credit, Agencies of credit, co-operative credit.
		6	Problem of capital formation in Agriculture.
		7	Agricultural marketing in India, the market structure, organization of markets, cooperative marketing.
		8	Agricultural prices in India, movement of prices, stabilization of prices, pricing policy, agricultural growth and stability.
3	Agricultural labor & State policy	9	Problem of agricultural labour
		10	Agrarian unrest, employments situation and wages.
		11	State policy towards agriculture in India. Food policy,
		12	Taxation of agricultural land and income.
4	Agricultural development	13	Agricultural development under the different plan periods
		14	New agricultural strategy
		15	Technological change and productive
		16	Green revolution.

CONTENT

Block/ Unit

UNIT-1

1.1 Chapter

LAND UTILIZATION

Objectives

After completing this chapter, you will be able:

- To understand the concept of land utilization
- To know about land utilization pattern
- To understand cropping pattern
- To know about factors determining cropping pattern

Structure:

1.1.0 INTRODUCTION

Land which is called the quintessential reservoir of ancestral resources is a conservative free gift of nature. Food, clothing and shelter have their original home of abundance in it. But this use of land to suit to the multifarious needs of man has become a topic of global concern. With the passage of time, economical man has used his talents and resourcefulness in exploring the areas where land can be better utilized to live up to his existential expectations. To meet his variegated demand for food land has been utilized for raising multiple crops in place of a single crop. Forest which grows in land, controls the very human habitat and processing comes to serve human needs in more than many

ways. Land is important not only for producing foodstuffs, cereals, pulses and other crops for consumption but also generating surpluses to meet increasing demands created by rising population and developing industrial sector, for laying down the transport network, communication, construction of dwelling houses and public institutions etc. Therefore, being the resource for crop, fodder and forest production land also provides space for building cities, roads, airports, health resorts, schools and so on. Industries, which define and redefine man's civilizational aspiration and achievement, are housed on land. The entire 'flora and fauna' is the handiwork of land and the whole planet earth is metaphysically and geologically a vast and measureless cluster of land and land only. But land, the colossal agent for man's basic existence needs to be revamped. To meet the multifarious needs of man the scope of bringing in more land into cultivation is limited in any country.

Agriculture is a prelude to India's economic development and a prerequisite for poverty alleviation and overall economic development. Agriculture is a land-based industry and activity. As such, land and water have been the basic elements of life support system and an important resource for the economic life of a majority of population in the country. The way people handle and use land resource is decisive for their social and economic well-being as well as for the sustained quality of land resource. The way and the extent to which the land is utilized sets the pace of a country's economic development. India, with only 2.4 per cent of world's total land area supports 18 per cent of human and 15 per cent of livestock population in the world. There are 75.5 million hectares of waste lands in the country of which around 58 million hectares are treatable and can be brought into productive levels through appropriate measures (National Remote Sensing Agency's Report). However, the per capita arable land in the country is only 0.15 ha, which is expected to come down to nearly 0.08 ha by 2025 (Kanda, 2007). It is a paradoxical situation that on the one hand more production is required from the scarce soil resources for meeting the demand of ever-increasing population, while on the other, cultivable areas are being shifted towards non-agricultural uses. India has experienced a considerable shift under different land use classes during the post-Independence period.

1.1.1 THE CONCEPT OF LAND UTILIZATION

Land resource constitutes the fundamental base for all human activities. It is the most important resource of a country like India where agricultural sector is relatively more prominent than the industrial and service sector. The concept of 'land utilization' or 'land use' means the way and the extent to which the land is utilized for various purposes to satisfy human wants. Land use is highly a dynamic process. Land is not only used for producing foodstuffs, cereals, pulses and other crops for consumption but it is also utilized for generating surpluses to meet the increasing multifarious demands created by rising population, developing industrial sector by supplying raw materials, for laying down the transport network, communication, construction of dwelling and public institution etc. Land use in broad sense, has been defined as any kind of permanent or cyclic human intervention to satisfy human needs, either material or spiritual or both, from the complex of natural or artificial resources which together are called land.

1.1.2 THE LAND UTILIZATION PATTERN

Land utilization pattern means the use of land resources under different ecological settings. The pattern of land use of a country at any point of time is determined by the physical conditions, geographical location, population size and growth, level of development, economic and institutional framework taken together. Land use pattern is a process, which assigns each tract of land in an area to its proper class in a system of classes. The classes in the system are defined in terms of the qualities or characteristics with which the classification is concerned. In other words the existing land use pattern has been evolved as the result of the action and interaction of various factors such as the physical characteristics of land, the institutional framework, the structure of other resources such as capital, labour, etc. Land utilization depends

upon the availability of resources with the farmers and the nature of investment in relation with expected returns. Underutilization of land is associated with irrigation, tractors, commercialization and such factors, inability of farmers to adjust to higher demand for resources.

Classification of Land Utilization:

Land use pattern in India is mainly determined by economic, institutional and physical structure. Land area in India is ample but that needs proper care to survive and sustain. Land utilization pattern in India relates to the physical characteristics of land, the institutional and other resources, framework like labour, capital available. All these aspects are associated with the economic development. India has a total land area of approximately 328 million hectares. Till 1949-50, the land area in India was classified into five categories known as the fivefold land utilization classification. Those categories were:

1. Area under forests
2. Area not available for cultivation
3. Uncultivated land, excluding the current fallows
4. Area under current fallows, and
5. Cultivated area/Net sown area.

The Indian states were finding it difficult to present comparable data according to this classification owing to the lack of uniformity in the definition and scope of classification covered by these five broad categories. To remove the non-comparability and to break up the broad categories into smaller constituents for better comprehension, the Technical Committee on Coordination of Agricultural Statistics set up in 1948 by the Ministry of Food and Agriculture, recommended the following ninefold land use classification replacing the old fivefold classification and also recommended standard concepts and definitions for all the states as (i) Area under forests, (ii) Barren and uncultivable lands, (iii) Land put to non-agricultural uses, (iv) Permanent pastures and other grazing lands, (v) Cultivable wastes, (vi) Miscellaneous tree crops and groves not included in the net area sown, (vii) Current fallows, (viii) Fallows other than current fallows and (ix) Net sown area. But the above fivefold broad classification which represents a very broad outline of land use in the country is discussed below:

(1) Area under Forests

A bigger area under forests is an obligation, to maintain the ecological balance and for absorption of carbon dioxide, the assemblage of which is likely to heighten the greenhouse effect. This in turn would raise atmospheric temperature at the global stage. It may lead to thawing of ice caps and equivalent rise in sea levels, jeopardizing low-lying densely populated parts of the world. Forests supply home to wildlife and help their continuation. They help in enhancing the level of rainfall, minimizing cases of famine. Forested lands also help in permeation of rainwater in the subsoil and modulating the flow of river waters in both rainy and dry seasons. Forests safeguard not only water but soil as well. They, thus, help in plunging the volume of floodwaters and their ferocity.

(2) Area not Available for Cultivation

The area not available for cultivation generally includes land put to industrial, housing, urbanization, town-planning and other non-agricultural uses as well as barren and uncultivable land.

(3) Uncultivated Land, Excluding the Current Fallows

Under the heading uncultivated land, we include pasture, grazing land, tree cover, homestead and wasteland. The uncultivated area comprising area under non-agricultural uses and barren and uncultivable land, constitutes 13.6 per

cent of the total area. Other uncultivated land excluding fallow land which consists of (i) permanent pasture and other grazing land, (ii) land under miscellaneous tree crops and groves not included in net sown area, and (iii) waste land is stretched over 29.08 mha. (9.6 per cent of the total geographical area). Of these, 11.24 mha. are under permanent pasture and other grazing land, 3.63 mha.under miscellaneous tree crops and groves and 14.21 mha.under wasteland. Fallow land occupies an area of 23.3 mha. i.e., 7.6 per cent.

(4) Area under Current Fallows

Area under current fallows relates to land that is cultivable but is left unplanted due to water-logging or tree-shadows.

(5) Cultivated Area/Net Area Sown

The cultivated land indicates the net sown area. It refers to the total operational holdings of a farmer on which he can grow crops counted only once in an agricultural year. As per land utilization pattern for the year 1995, the total area of India is 328.73 million hectares (mha). The data available for land use classification for the year 1995 is for 304.83 mha. Of which forest area represents 22.43% (i.e., 68.39 mha.). The largest share of the total geographical area is occupied by the net sown area (46.8%) with 142.82 mha.

1.1.3 CHANGES IN LAND UTILIZATION PATTERN

The picture that we observe for 1995 is quite different from that in 1950.

(1) The area under forest cover has increased from 14.24% in 1950 to 22.43% in 1995. National forest policy lays down that the area under forest be steadily increased to 33% of the total geographical area of the country.

(2) By bringing additional area into cultivation, the net sown area, which represents area available for cultivation, has increased from 41.77% in 1950 to 46.85 in 1995.

(3) The area not available for cultivation has declined from 16.71% in 1950 to 13.54% in 1995. Here, the area under non-agricultural uses has increased while the area under barren land has declined. This implies that a large proportion of the barren land has been brought to economic use.

(4) The area under uncultivated land excluding fallow land has declined. An important feature in this context is that land under miscellaneous tree crops, plantation, etc., has declined significantly from 6.91% to 1.19%.

(5) There is a marked increase in the gross cropped area by 56.26 mha. (131.89 mha. in 1950 to 188.15 mha. in 1995). The increase in the cropping intensity from 110.7 to 131.7 is an indication of rabi and kharif area put to cultivation. Development and construction of major, medium and minor irrigation projects has resulted in higher cropping intensity and more area under crops. There is now little scope for extension of cultivable area without creating imbalance in ecological settings. Intensive cultivation with extension of irrigation facilities and scientific methods of dry farming could meet the food requirements of the growing population.

1.1.4 AGRICULTURAL LAND USE IN INDIA

In 1993-94, an area of 42.68 mha. was under rice, 25.2 mha. was under wheat, 33.5 mha. was under coarse cereals and 101.49 mha. under total cereals. An area of 23.4 mha. was under total pulses; 124.8 mha. was under total foodgrains, 2.94 mha. under fruits, 4.2 mha. under vegetables, 28.5 mha. under total oilseeds, 8.36 mha. under total fibres, 0.42 mha. under tobacco, 3.74 mha. under sugarcane, 2.36 mha. under spices, 10.64 mha. under other crops.

Scientific Cropping Pattern and Agricultural Land Use:

In order to increase agricultural production from given land resources, it is necessary to use scientific cropping pattern. Cropping system approach holds many promises in this regard. The adoption of cropping system technology and its successful implementation depends on physical and socio-economic resources, which are available or are made available at the time when they are needed. Location specific and farm based cropping pattern have to be evolved with consideration of such determinants as land, topography, water availability, intensity and duration of sunlight, labour availability, cash or credit, power source and market demand.

Adequate resource utilization of a farm in integrated farming system with crops as major enterprise is the crux of the problem. Carandang (1980), has projected that the cropping system approach has two main components, *viz*., farm resources and production technology. Farm resources are of two types: physical and socio-economic. Physical resources include land, sunshine and water. On the other hand, socio-economic factors include market, labour, power, cash, etc. Production technology need to be integrated on scientific basis.

Governmental Intervention for Scientific Land Use:

A nation lives for thousands of years whereas individuals live for some decades. Therefore, individual activities should not be allowed to restrict the potentials for future generations. Any national government has to safeguard the interests of future generations without compromising the welfare of the present generation. Hence, the need for better land use planning arise where both the public and private interest are taken care of.

In order to facilitate scientific and sustainable land use governments have promulgated various legislations. These legislations were enacted mostly after Independence. Land Utilization Acts were passed in 1947 and 1949 respectively by Uttar Pradesh and Punjab governments. The Utter Pradesh Soil Conservation Act, 1954 embodies soil conservation programmes. The states of Bihar and Punjab have passed Land Reclamation Acts. The Madhya Bharat Land Utilization Act of 1950 restricts keeping land fallow for longer periods. The Bombay Khar Land Act, 1948 and Punjab Land Preservation Amendment Act, 1953 were enacted to restrict misuse of land resources.

However these acts have not been able to check the mismanagement of land resources. Due to improper implementation and loose interpretation of laws there have been many instances of misuse of land.

1.1.5 CROPPING PATTERN IN INDIA

By crop pattern, we mean the proportion of area under different crops at a point of time, changes in this distribution over a period of time, and factors determining this change in distribution. Cropping pattern in India is determined mainly by natural factors like rainfall, climate and soil conditions. However, technological factors have also played an important part. For example, consequent upon the adoption of the new seed-fertiliser technology (generally known as the High Yielding Varieties Programme) in the mid-1960s, area under wheat increased significantly. In recent years, the government introduced various programmes for increasing the production of oilseeds. As a result, area under oilseeds increased rapidly. Significant facts about the cropping pattern in India are summarised below:

1. Food crops including cereals, millets, pulses, vegetables and fruits cover nearly **three-fourths** of total cropped area. Of the total area under foodgrains, a large proportion is occupied by cereals. For instance in 1950-51, out of total area of 97.3 million hectares under foodgrains as much as 78.2 million hectares (representing 80.4 per cent) was devoted to cereals. Of the total area of 125.7 million hectares under foodgrains in 2010-11, the share of cereals was 99.4 million hectares (i.e., 79.1 per cent). This shows that the area under pulses was only about 19-20 per cent of the total area under foodgrains both in 1950-51 and 2010-11.

2. Rice is the most important foodgrain crop in India. In 1950-51, it was grown on 30.8 million hectares which amounted to 31.6 per cent of total area devoted to foodgrains. In 2010-11, it was grown on 42.6 million hectares which amounted to 33.9 per cent of total area under foodgrains. This shows that **rice is grown on more than one third of the total area under foodgrains.** In fact, area under rice has increased in almost all the States in recent years. This is on account of notable improvements in the production of rice owing to special rice production programmes and rice technology have started yielding dividends after several years of research and extension.

3. The second important foodgrain crop in India is wheat. In 1950-51, it was sown on 9.8 million hectares (i.e., 10 per cent of the area under foodgrains). However, it has consistently improved its position particularly after the advent of the green revolution during the mid-1960s. **In 2010-11, wheat was grown on 29.2 million hectares which comes to 23.2 per cent of the area under foodgrains.** Area under wheat has risen considerably in Punjab, Haryana, Uttar Pradesh and Bihar. The main cause of this expansion is the technological breakthrough achieved in wheat combined with price support and market infrastructure.

4. The case of coarse cereals is disappointing. **The combined area under jowar, bajra and maize declined in percentage from 28.6 in 1950-51 to 19.9 in 2010-11** (expressed as a percentage of total area under foodgrains). Varietal improvements though not completely bypassed, have nevertheless been less sustainable in their case. High yielding varieties can yield three to seven times more than traditional varieties but most of them are location specific and are susceptible to pests and diseases. Moreover, "low rate of profit, low value status and restricted demand as they are produced and eaten by poor people restrict their absorption capacity for yield-enhancing high cost inputs like chemical fertilisers." Coarse cereals also face competition from superior cereals like rice and wheat which in some areas are available at prices lower than that of coarse cereals. As a consequence of all these factors, area under coarse cereals in most of the States either stagnated or decreased significantly.

5. Area under oilseeds was 10.7 million hectares in 1950-51 and 19 million hectares in 1985-86. To meet the domestic requirements of edible oils, the government had to import considerable quantities of oilseeds in early 1980s. To achieve self-sufficiency in edible oils, the government launched a number of programmes in 1980s — National Oilseeds Development Project (NODP) in 1985-86, Technology Mission on Oilseeds (TMO) in May 1986 and Oilseeds Production Thrust Programme (OPTP) in 1987-88. As a result of these programmes, area under oilseeds increased rapidly from 19 million hectares in 1985-86 to 26.2 million hectares in 1998-99. Thereafter, it started falling and in 2003-04, area under oilseeds was 23.7 million hectares. **However, in 2010-11, area under oilseeds stood at 26.8 million hectares.**

6. Coming to commercial crops we find that the area under sugarcane increased from 1.7 million hectares in 1950-51 to 2.8 million hectares in 1995-86 and 4.9 million hectares in 2010-11. Area under cotton rose from 5.9 million hectares in 1950-51 to 11.1 million hectares in 2010-11. The area under jute and mesta increased (on all India basis) from 0.6 million hectares in 1950-51 to 0.9 million hectares in 2010-11.

The above data show that the cropping pattern in India has undergone significant changes during the period of planning (particularly during the last four decades). **First,** with the introduction of new technology during the mid-1960s, area under wheat has increased both in absolute and relative (share of total cropped area) terms. **Second,** area under coarse gains and pulses has considerably shrunk. **Third,** with the launching of the Technology Mission on Oilseeds during the mid-1980s, the area under oilseeds expanded significantly. In fact, from mid-1980s to early 1990s, there was a marked shift in favour of oilseeds as the pressure of edible oil imports forced a conscious decision on the part of the government to achieve self-sufficiency in edible oils by 1990. For this purpose, domestic market prices of oilseeds were substaintially pushed up. India achieved a position of near self-sufficiency in edible oils by 1992-93, when its imports of edible oils came down to almost a fraction of what they were in the mid-1980s. "During this period, about 7 million hectares of additional area came under oilseeds, partly from kharif fallows, partly from crop intensification and

a substantial portion through crop substitution. The shift was largely from coarse cereals, but in some pockets even pulses and wheat gave way to oilseeds."

With the purpose of achieving a better crop balance and tapping the export markets, increasing attention is now being focussed on horticultural crops (which include fruits, vegetables, spices, floriculture, coconut, cashew, etc.). With this end in view, reliable data base for these crops is being prepared, adoption of new technology is being encouraged and incentives to promote private investment in hi-tech horticulture are being provided. Since the shelf life of fruits and vegetables is very short (generally between 1 week to 3 months), development of horticulture is possible only if food processing is paid adequate attention. With this end in view, the Ministry of Food Processing is setting up food parks in different parts of the country. The idea behind setting up of food parks is to enable small and medium entrepreneurs find access to capital-intensive facilities, such as cold storage, warehouse, quality control laboratories, effluent treatment plants, etc.

1.1.6 FACTORS DETERMINING AND AFFECTING CROPPING PATTERN

The crop-pattern of any country is due to a number of factors which can be classified into the broad categories of natural, social, historical and economic. In addition, the government of a country can also effect changes in crop pattern through its agricultural policy.

1. Natural factors: These pertain to the physical characteristics and natural endowments of a region and are the most important factors determining its crop-pattern. Nature of soil, type of climate, extent of rainfall, etc., will determine the basic crop pattern of a region over a period of time. For example, in areas having sufficient rainfall and waterlogging the most appropriate crop is rice since it can withstand water. This explains the cultivation of rice in West Bengal. In areas having low rainfall and small availability of water supply, the choice will naturally fall upon jowar and bajra which require small quantity of water. Therefore, in Rajasthan and rain deficient areas in Uttar Pradesh, the basic crops are jowar and bajra. Similarly, the soil of the Indo-Gangetic plain is suitable for the growing of wheat.

2. Economic factors: These pertain to prices of agricultural commodities, incomes of farmers, size of holdings, availability of agricultural inputs, nature of land tenure, etc. The importance of these factors in affecting the crop pattern is self-evident. For example, increase in prices of a certain crop consistently for some years relative to other crops can induce the farmers to shift over to that crop. For instance, farmers growing pulses and inferior cereals like jowar, bajra and maize have been tempted to shift over to the production of wheat in recent years on account of price factors and also on account of the higher productivity-potential of new high yielding varieties of wheat. The size of farm holdings also affects the crop pattern. Small farmers give first priority to food crops because they are more interested in fulfilling their food requirements in the first instance. As against this, large farmers with substantial holdings may tend to devote a part of their land for growing cash crops. Availability of agricultural inputs like seeds, fertilisers, irrigation, etc., also affects the crop pattern to some extent.

3. Historical factors: In certain areas certain crops are grown by sheer accident or necessity and then that cropping pattern is maintained through years. Historical pattern of land tenure also plays its role. If the land is divided into a number of small plots with ownership vested in numerous small and marginal farmers (as under ryotwari), the tendency will be to grow food crops. As against this if ownership of land is vested in large landowners (as under zamindari) the tendency will be to produce more cash crops.

4. Social factors: Social environment, customs, traditions, outlook towards material things, etc., also influence crop-pattern to some extent. For example, in the pre-Independence period, the outlook of a majority of farmers was very narrow and they were bound by traditions. Therefore, the same crop pattern was continued to be adopted by

successive generations. After Independence, gradual changes in social awareness and social consciousness are emerging which are, in turn, making farmers more and more responsive to price changes and productivity possibilities of different crops.

5. Government policy: Policies of the government relating to different crops, exports, taxes, subsidies, supplies of inputs, availability of credit, etc., can affect the cropping pattern in a significant way. In the pre-Independence period, government policy had a very restricted scope to play in the agricultural sector and cropping pattern was determined exclusively by other factors. However, after Independence the policies of expansion of irrigation facilities, determination of agricultural prices like procurement prices, support prices and a host of other policies have all contributed to changing crop pattern. Adoption of high-yielding varieties of seeds in selected areas of the country with a package of inputs and incentives has contributed crucially in encouraging the farmers of some regions to switch over to wheat.

1.1.7 TYPES OF CROPPING PATTERN

Cropping pattern indicates the proportion of area under different crops at a point of time. Cropping activities go on all the year round in India provided water is available for the crops.

In India, the cropping pattern follows two distinct seasons: Kharif season from July to October and Rabi season from October to March. The crops grown between March to June called zaid. The crops are grown solo or mixed (mixed-cropping) or in a definite sequence (rotational cropping). The land may be occupied by one crop during one session (mono cropping) or by two crops during one season (double-cropping) which may be grown in a year in a sequence. We explain these cropping systems below:

(a) Mono-cropping: Mono-cropping or monoculture refers to growing of only one crop on a piece of land year after year. It may be due to climatological and socio-economic conditions or due to specialization of a farmer in growing a particular crop, e.g., under rainfed conditions, groundnut or cotton or sorghum are grown year after year due to limitation of rainfall. In canal irrigated areas, under waterlogged condition, rice crop is grown as it is not possible to grow any other crop.

(b) Multiple-cropping: Growing two or more crops on the same piece of land in one calendar year is known as multiple-cropping. It is intensification of cropping in time and space dimensions, i.e., more number of crops within a year and more number of crops on the same piece of land at any given period. It includes inter-cropping, mixed-cropping and sequence cropping. Double-cropping is a case where the land is occupied by two crops, which are grown in a year in sequence.

(c) Inter-cropping: Inter-cropping is growing of two or more more crops simultaneously on the same piece of land with a definite row pattern. For example, growing setaria and redgram in 5:1 ratio. Thus, cropping intensity in space dimension is achieved. Inter-cropping was originally practiced as an insurance against crop failure under rainfed conditions. At present, the man objective of inter-cropping is higher productivity per unit area in addition to stability in production. Inter-cropping system utilizes resources efficiently and their productivity is increased.

For successful inter-cropping, there are certain important requirements:

(1) The time of peak nutrient demands of component crops should not overlap.
(2) Competition for light should be minimum among the component crops.
(3) Complementarity should exist between the component crops.
(4) The differences in maturity of component crops should be at least 30 days.

(d) Mixed-cropping: Mixed-cropping is growing of two or more crops simultaneously intermingled without any row pattern. It is a common practice in most of dry-land, tracts of India. Seeds of different crops are mixed in certain proportion and sown. The objective is to meet the family requirement of cereals, pulses and vegetables.

(e) Sequence Cropping: Sequence cropping can be defined as growing of two or more crops in a sequence on the same piece of land in a farming year. Depending on the number of crops grown in a year it is called double, triple or quadruple cropping involving two, three and four crops respectively.

In addition to the above systems, relay cropping and ratoon cropping are also in existence. Relay cropping refers to planting of the succeeding crop before harvesting the preceding crops. Ratoon cropping or rationing refers to raising a crop with re-growth coming out of roots or stalks after harvest of the crop.

(f) Integrated Farming System: Integrated farming system is a holistic method of combining several enterprises like cropping system, dairying, piggery, poultry, fishery, bee-keeping, etc., in a harmonious way so as to complement each other. The objective is efficient resource utilization and maximization of profit in such a way so as to cause least damage to soil and environment.

1.1.8 WHY CROPPING SYSTEMS DIFFER?

Both climatic factors and resources of the farmers determine the cropping pattern on a farm. Tough climate plays most vital part in crop selection, the area under crop is also influenced by economic consideration of the farmer, namely irrigation water, cost of inputs and prices of the products. In any locality, the prevalent cropping system is the cumulative results of past and present decisions by individuals, communities or government or their agencies. A basic requisite for higher cropping intensity is the availability of water either through precipitation or through irrigation. It is being increasingly realized that the land and water resources are not unlimited and the wise use of the same is imperative. This is especially so far the countries like India where the population pressure is continuously increasing.

Tropical countries like India are fortunate in that the temperature condition remain favorable practically throughout the year for growing crops. However, it is crucially dependent upon water supply through natural precipitation or irrigation facility. Multiple-cropping has been in practice in many parts of India since long. Similarly, mixed-cropping has been an ancient art in India. Mixed-cropping systems were adopted as an insurance against failure of crops due to seasonal conditions or due to attack of pests and diseases. In recent years it has been shown beyond doubt that there are many other advantages too.

Integrated farming system seems to be the answer to the problem of scarcity of land resources. This will increase the income level and improve the nutrition standard of small-scale farmers with limited resources. Researchers on multiple-cropping system, however, suggest that the resources of the farmers be given major emphasis so that technologically a mixed-cropping can be adopted. Gradually new concepts on multiple-cropping have started coming in and now there has been some accumulation of useful scientific information. The information is based on analytical work on different crop combinations and sequential growth of the crops. In this respect cultivated areas in the country can be broadly classified into three categories based on rainfall pattern:

(i) Area where annual rain fall is above 1150 mm

(ii) Area where rainfall ranges from 750-1150 mm

(iii) Area where rainfall is below 750 mm

Most of the areas in Assam, Kerala, Odisha and West Bengal can be included in the first category. Basic problems in these areas pertain to limited irrigation and poor drainage. Most of the farmers are engaged in rice cultivation. Large

parts of Tamil Nadu, Utter Pradesh and Andhra Pradesh fall in the second category also occupy about one third of the total cultivated area in the country. In these areas there is large potential for creating minor irrigation facilities. The third category also occupies nearly one third of the cultivated area, comprising parts of Andhra Pradesh, Karnataka, Maharashtra and Rajasthan. In these areas, unless major and medium irrigation facilities are provided, there is little hope for raising cropping intensity to a substantial extent.

The cropping pattern is influenced by:

- Traditional social practices and dietary habits
- The crops with practicable pest and disease control method and suitability with ecological environment
- The crops which are most profitable (or are high-yielding)
- The combination of crops that result in profit maximization and cost minimization.

Current Cropping Patterns

Three important features mark the cropping pattern of India: (i) Predominance of foodgrain crops, (ii) Slight shift towards commercial crops, and (iii) Noticeable increase in some individual crops.

Taking the major crops into consideration, we can present a broad picture in the cropping pattern in lndia. The major pattern follows two distinct groups: Kharif (monsoon crops) and Rabi (post-monsoon crops). The Kharif crop includes rice, sorghum, bajra, maize, ragi, groundnut, cotton, etc. The crop occupying the highest percentage of the sown area of the region is taken as the base crop. All other possible alternative crops which are sown in the region either as substitute for the base crop in the same season or as the crops which fit in with the rotation in the subsequent season, are considered as the pattern.

The Kharif Season Cropping Pattern:

The kharif season cropping pattern comprises mainly rice and non-rice-based crops.

(i) Rice-based cropping pattern: Rice is the best crop in this category and 9% of the area in India comes under rice-based cropping pattern. Nearly 45% of the total rice area in India receives 30 cm per month of rainfail during at least two months (July-August) of the south-western monsoon and much less during other months. In contrast to these parts, the eastern and southern regions, comprising Assam, West Bengal, Coastal Orissa, Coastal Andhra Pradesh, Karnataka, Tamil Nadu and Kerala which receive 10-20 cm per month, also come under this cropping pattern. On the all India basis, about 30 rice-based cropping patterns have been identified in different states.

(ii) Kharif cereals other than the rice-based cropping pattern: Maize, jawar, bajra from the main kharif cereals, ragi and small millets come next, these are grown in limited area. Maize is grown in high rainfall areas, jowar in medium rainfall areas and bajra in low rain fall areas. The extent of the area under these crops during south-western monsoon season is: maize (5.6 mha.), jowar (11 mha.) and bajra (12.4 mha.).

Ragi is a kharif cereal (2.4 mha.) and is mainly concentrated in Karnataka, Tamil Nadu and Andhra Pradesh. These states account for more than 60% of the total area under this crop.

(iii) Maize-based cropping pattern: The largest areas under kharif maize are: Uttar Pradesh (14 mha.), Madhya Pradesh (0.58 mha.) and Punjab (0.52 mha.). In the four states namely Gujarat, Jammu & Kashmir, Himachal Pradesh and A.P.; the area under maize ranges from 0.24 to 0.28 mha., in each, whereas other states have much less area under it. On the all India basis, about 12 maize-based cropping patterns have been identified.

(iv) Kharif jowar-based cropping pattern: The area under the kharif jowar in India is highest in Maharashtra (2.5 mha.) closely followed by Madhya Pradesh (2.3 mha.). In each of the states of Rajasthan, Andhra Pradesh, Karnataka and Gujarat, the area under this crop is between 1 and 1.4 mha. Jowar is mainly grown in areas having rainfall range from 10 to 20 cm per month, least for 3 to 4 months of the south-eastern monsoon. On the all India basis, 17 major cropping patterns have been identified under this category.

(v) Bajra-based cropping pattern: The area under bajra crop is about 12.4 mha. Rajasthan has about two-third of the total area. Maharashtra, Gujarat and Uttar Pradesh together have over 4.6 mha., constituting the remaining one-third area under the bajra crop. On all India basis 20 major cropping patterns have been identified with bajra as base crop.

(vi) Groundnut-based cropping pattern: Groundnut is sown over an area of about 7.2 mha., mostly in five major groundnut producing states : Gujarat (24.4%) area, Andhra Pradesh (20.2%), Tamil Nadu (35.5%), Maharashtra (12.2%) and Karnataka (12%). Five other states, *viz*., Madhya Pradesh, Uttar Pradesh, Punjab, Rajasthan and Odisha together have about 17.3% of the total area under groundnut as base crop. On the all India level, about nine major groundnut-based cropping patterns have been identified.

(vii) Cotton-based cropping pattern: Cotton is grown over 7.6 mha. in India. Maharashtra shares 36% (2.8 mha.), followed by Gujarat with 21% (1.6 mha.), Karnataka with 13% (1 mha.) and Madhya Pradesh with 9% (0.6 mha.) of the area. Together these four states account for about 60% of area under cotton. The other cotton growing states are Punjab, Andhra Pradesh, Tamil Nadu, Harayana and Rajasthan. On the all India basis about 16 broad cotton-based cropping patterns have been identified.

Rabi-season Cropping Patterns

The major cropping patterns prevalent in India during the rabi season are: (i) wheat and gram-based cropping patterns, and (ii) jowar-based cropping pattern.

(a)Wheat and gram-based cropping patterns

These two crops are grown under identical climate and can often be substituted for each other. On the all India level, about 19 cropping patterns have been identified with wheat and 7 cropping patterns with gram. The core of the wheat region responsible for 70 per cent of the area and 76 per cent of production comprises Punjab, Haryana, Uttar Pradesh, Madhya Pradesh flanked by Rajasthan and Gujarat in the Western region and Bihar and West Bengal in the Eastern region.

(b) Rabi jowar-based cropping patterns

On the all-India level, about 13 cropping patterns have been identified with the rabi-jowar. Maharashtra has the largest number of these cropping patterns, wherein starting with the exclusive rabi-jowar, bajra, pulses, oilseeds and tobacco are grown as alternative crops.

Changes in the Cropping Patterns

The trend in the land use pattern and cropping pattern over the last 50 years in India has shown increasing use of land for the purpose of cultivation with slight variations. The change in the land use pattern and cropping pattern is vastly affected by rapid urbanization. The higher cultivable area has been achieved by bringing large acreage of uncultivable land into cultivation.

1.1.9 SUMMARY

This first Chapter of Unit-1 spells out the concept of land utilization and its pattern. Then it delineates types of land utilization, changes in land utilization, cropping pattern, etc. It also explains cropping pattern and the factors determining it. Then it concludes with the reasons for difference in cropping pattern.

1.1.10 SELF ASSESSMENT QUESTIONS

1. Define land utilization and give a full account of land utilization pattern in India.
2. Explain the factors responsible for determining cropping pattern.
3. Give reasons for difference in cropping system across our country.

Key Words

- **Land utilization**

  Land utilization refers to the ways in which land is used and managed for various purposes, including residential, commercial, industrial, agricultural, recreational, conservation, and infrastructural activities. Effective land utilization involves planning, zoning, and regulation to ensure sustainable, efficient, and equitable use of land resources. This encompasses activities such as housing, business, farming, conservation, and infrastructure development, all aimed at optimizing land productivity and enhancing quality of life while minimizing environmental impacts.

  Cooperative Movement

- The cooperative movement refers to a socio-economic movement where individuals voluntarily come together to form cooperative organizations to meet common needs and achieve shared goals. These cooperatives are owned and democratically controlled by their members, who often operate in various sectors such as agriculture, finance, retail, housing, and services.

  Cropping System

- A cropping system refers to the specific arrangement or sequence of crops grown on a particular area of land over a defined period. It encompasses the selection of crops, their planting patterns, timing, and management practices employed to optimize agricultural productivity, sustainability, and resource utilization.

- **Crop Rotation:**

  Crop rotation involves alternating the types of crops grown in a specific sequence over time. It helps break pest and disease cycles, improve soil fertility, and reduce weed pressure. Common rotations include cereals followed by legumes or cover crops.

  Agro forestry:

  Agro forestry integrates trees or shrubs with crops or livestock within the same agricultural system. It combines agricultural production with environmental benefits such as improved soil conservation, biodiversity, and carbon sequestration.

1.1.11 **Reference:**

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12. Report on Agriculture Census of India, 1970-71

13. Land Reform in Principle and Practice-Warriner

14. Land Reform and Economic Development-Peter Droner

UNIT-2

1.2 Chapter

LAND TENURE SYSTEMS IN PRE-INDEPENDENT INDIA

Objectives

After completing this chapter, you will be able:

- To know about systems of land tenure prevalent in pre-Independent India and their exploitative nature
- To highlight objectives of land reforms introduced by the Government of India after Independence
- To bring out the programmes for abolition of intermediaries, tenancy reforms and ceilings on landholdings
- To know about the problem of sub-division and fragmentation of holdings and measures to tackle this problem - namely cooperative farming and consolidation of holdings.

Structure:

1.2.0 INTRODUCTION

Meaning of Land Tenure

The term 'land tenure' generally refers to the terms and conditions on which land is occupied, owned, held and used by a person or a household. It is concerned with the rights and pattern of control of the land resource. Land tenure system indicates the period for and the manner in which land in retained by a cultivator. In other words land tenure implies structure and pattern of landholding. In a narrow sense it relates to ownership of land, but in a broad sense, it includes the entire gamut of socio-economic structure of a pre-dominantly agrarian economy and hence, it is called agrarian structure. This agrarian structure is developed over a period of time in regular and renewed basis to changing times and ever improving process of technological developments. The pattern of landholding and the emerging agricultural activities indeed hold key to the economic development of a country predominantly dependent on agriculture.

Sometimes ownership of land is concentrated among a few landlords each of whom owns an enormous acreage. This may inhibit the agricultural growth in output per acre. This is because the landlord may be interested only in the rent which he can obtain from the tenant farmers. The landlord may be unwilling to invest in drainage, fencing, irrigation and ditching schemes which could possibly lead to large increases in an output per acre. On the otherword, the tenant farmers may also be unwilling to incur such expenditure on land which does not belong to them or they may not be able to afford such investment.

There is a considerable amount of statistical evidence to suggest that on very large farms output per acre is often less than in rather smaller holdings. In current circumstances where the objectives are generally to increase output probably with an employment constraint, there is a presumption that owner-occupied farms of a size at least sufficient to permit the improvement referred to above are optional. At the other extreme, there are cases where ownership of land is extremely fragmented with each family having only a tiny plot of land. Application of new technology with new equipment and machinery may not be economic propositions on such small farms. As a result output per acre may be lower than on larger farms simply because the farmer cannot afford the inputs necessary to increase agricultural productivity.

Now, therefore the ownership of large patches of land does not necessarily foretell the harvesting of a huge quantity of agricultural product. How methodically and mathematically and with what perception of land is used determine the opulence of the harvest. Otherwise, we have to develop a new ethic for the land to sustain us on this planet.

1.2.1 SYSTEMS OF LAND TENURE IN PRE-INDEPENDENT INDIA

At the time of Independence, there were three types of land tenure systems prevailing in the country — the zamindari system, the mahalwari system and the ryotwari system. The basic difference in these systems was regarding the mode of payment of land revenue. In the zamindari system, the land revenue was collected from the farmers by the zamindars; in the mahalwari system by the village headman on behalf of the whole village; while in the ryotwari system the land revenue was paid to the State directly by the farmers. In all the three systems the usual practice adopted was to get the land cultivated by tenants.

Tenants, themselves, were of the following three types: (1) Occupancy tenants, (2) Tenants-at-will, and (3) Sub-tenants. Occupancy tenants enjoyed permanent and heritable rights on land. They had security of tenure and could claim compensation from the landlord for any improvement effected on the land. As against this, tenants-at-will did not have security of tenure and could be evicted from land whenever the landlord so desired. The position of sub-tenants was also similar. The only difference between them and tenants-at-will was that, whereas the latter were appointed by the landlords themselves, sub-tenants were appointed by the occupancy tenants.

In addition to these classes of people, a big class of agricultural labourers existed side-by-side. These people had no land whatsoever and worked on the land of others on wages.

1.2.2 ZAMINDARI SYSTEM

This system was created by the East India Company when in 1793, Lord Cornwallis entered into 'permanent settlement' with landlords with a view to increasing the revenue of the company. Under the settlement, the landlords (known as zamindars) were declared full proprietors of large areas of land. In return, the task of collecting rent from the farmers was entrusted to them. It is an intermediary agency system between the state and the actual cultivators or tiller of the soil, with ownership and control rights in land was vested with the intermediary, i.e., the Zamindar entitling to collect rent or appropriate share of crop produce from the actual cultivators. The intermediaries were vernacularly known as Zamindars, Jagirdars, Inamdars, Talukdars, Lambarder, Kukuddums, Sarbarakars, Kharidadars, Pradhan, Khot

etc. Landlords never cultivated the land they owned and rented them out cultivators. This system also known as absentee landlordism. Under this system, landlords never cultivated the land they owned and rented them out to cultivators. Thus, the zamindars were to function as intermediaries between the cultivators and the State. The share of the government in total rent collected by the zamindars was kept at 10/11th, the balance going to the zamindars as remuneration. At the time of Independence, this system was prevalent in West Bengal, Bihar, Orissa, Uttar Pradesh, Andhra Pradesh and Madhya Pradesh.

The zamindari system suffered from a number of defects. It created a unique agrarian structure in the countryside which conferred the right of sharing the produce of land without participating personally in the productive process. The system itself was based on exploitation as it conferred unlimited rights on the zamindars to extract as much rent as they wished. According to Bhawani Wen, approximately 25 per cent of the produce was taken away by the intermidiaries in the form of rent. This would mean that out of the income of ₹ 4,800 crore from agriculture in 1949-50, the share of intermediaries was as high as ₹ 1,200 crore. The grabbing of such a high proportion of income by a parasitic class was not only socially unjust but also highly detrimental to capital formation and economic development.

The actual cultivator was left with no surplus to invest in better implements, improved seeds or fertilizers and neither was there any incentive for him to increase agricultural production and productivity. Thus, according to Thorner, a built-in 'depressor' continued to operate in the countryside characterized by low capital intensity and antiquated methods. The tillers showed no interest in modernization of agriculture or in prevention of such recognized evils as fragmentation. Consequently, agricultural production was held down and from the 1880s to the 1940s, it rose so slowly as to amount to virtual stagnation.

Not only this, the records of rights in land were not systematically maintained in most areas governed by landlords. As a result, credit institutions were slow to develop in zamindari areas. Public investments in agriculture were generally less in these areas. Communal rights in pastures, forests, etc., were encroached upon and the cultivator was made to pay to gain access to these. In addition to excessive rents and illegal exactions, the zamindars forced peasants to do begar or offer free service or various gifts/nazranas, etc.

1.2.3 RYOTWARI SYSTEM

It refers to the system of land tenure in which each ryot (cultivator) was recognized by law as the proprietor with the right to transfer or mortgage or sublet the land. This system was introduced under the Regulation VII of 1822 Act, mainly in the province of Madras and Bombay.

This system was initially introduced in Madras (Tamil Nadu) by Thomas Menno and Captain Read in 1792 and was later extended to Maharashtra, Barar, East Punjab, Assam and Coorg. Under this system, the responsibility of paying land revenue to the government was of the cultivator (or individual ryot) himself and there was no intermediary between him and the State. The ryot or the farmer had full rights on land regarding sale, transfer and leasing of land and could not be evicted from the land so long as he pays the land revenue to the Government. These rights were not available to cultivators under the zamindari system.

The settlement of land revenue under the ryotwari system was done on a temporary basis. In Madhya Pradesh, such temporary settlement was done after every 20 years, in Bombay (Maharashtra) after every 30 years and in Madras (Tamil Nadu) and United Provinces (Uttar Pradesh) after every 40 years.

Though the ryotwari system appears satisfactory on the face of it, yet it also developed various snags. In these areas, moneylenders and mahajans granted loans to cultivators by mortgating their lands. Soon, substantial portions of land slipped out of cultivators' hold and became the property of moneylenders and mahajans. The latter started giving

land for cultivation on lease and soon a new zamindar class (with all its exploitative practices) started developing. At the beginning of the era of Independence at least one-fifth of the total area under cultivation even in ryotwari tracts had passed under open tenancy while an unknown, though substantial, proportion of area was worked under forms of crops sharing, in essence no different from tenancy.

1.2.4 MAHALWARI SYSTEM

This system was introduced by William Bentinck in Agra and Oudh under Regulation IX of 1833 Act. It was later extended to Madhya Pradesh and Punjab. Under this system Mahal means a village. The mahalwari tenure refers to the whole village rather than the individuals. So, it was a joint village system. The ownership of property was joint or community-based. The share of the State in rent varied from 40 to 70 per cent. Under this system, the whole village was treated as an unit as far as payment to collect the land revenue. The responsibility for collecting the land revenue and depositing it in the treasury was of the village village headman or a co-sharer appointed for the purpose. According to the Congress Land Reforms Committee, the ownership of land under this system was collective. Period of 'settlement' on the land, fixation of land revenue, etc., were different in different Mahalwari systems.

Under the above mentioned three land tenure systems, the overall system of collection of revenue was based on exploitation. The British government snatched away surplus above the minimum subsistence the cultivator produced. The latter were forced to lead a wretched life of the deprivation. Under these systems, the practice of cultivation by tenants became widely prevalent. The tenants were also exploited in a number of ways. It was basically to stop the exploitation of the actual tillers of the soil and pass on the ownership of the land to them that land reforms introduced in the post-Independence period in India.

1.2.5 SUMMARY

This Chapter of Unit-1 gives us a full account of the three major land tenure systems namely Zamindari system, Mahalwari system and Ryotwari system that existed during British Rule in India. Under these land tenure systems, the overall system of collection of revenue was based on exploitation. The tenants and the actual tillers of the land were in a state of insecurity of tenure and were exploited in various ways. Soon after Independence of India, all these inequitable land tenure systems were abolished and land reform programmes were undertaken with a view to protect the interest of the tenants and to raise the productivity of agriculture.

1.2.6 SELF ASSESSMENT QUESTIONS

1. Define Land Tenure System. Discuss, in brief, the types of land tenure system prevailing during the period of pre-Independence of India.
2. Critically examine the economic consequences of different land tenure systems introduced during British rule in India.
3. Write short notes on any two of the following:
   (a) Zamindari System
   (b) Mahalwari System
   (c) Ryotwari System

Key Terms

1. **Zamindari System**: During British colonial rule, the Zamindari system was established. Zamindars were intermediaries who collected revenue from peasants on behalf of the British government. They were granted large landholdings and had significant control over land distribution and administration.

2. **Ryotwari System**: This system was implemented by the British in parts of India, particularly in Madras (now Tamil Nadu), Bombay (now Maharashtra), and parts of the United Provinces (now Uttar Pradesh). Under this system, individual peasants were recognized as the owners of land, and they paid revenue directly to the British government.

3. **Mahalwari System**: Introduced by the British in areas like Punjab, North-Western Provinces (now Uttar Pradesh), and parts of Central India, this system involved the collection of revenue from entire villages or mahals. The responsibility for payment fell on the village as a whole or on large landholders within the village.

4. **Community Land Tenure**: In some regions, particularly tribal areas and hilly terrains, community-based land tenure systems prevailed. These systems often involve collective ownership and management of land by the community or tribes.

5. **Tenancy Laws**: Various states in India have enacted laws to regulate the relationship between landlords and tenants, including laws governing rent control, protection of tenant rights, and regulation of land leasing.

6. **Land Reforms**: Post-independence, India initiated land reform measures to address issues of land distribution, tenancy, and agricultural productivity. These reforms included land redistribution, tenancy reforms, abolition of intermediaries, and protection of tenant rights.

7. **Land Ceiling Laws**: To prevent concentration of land ownership and promote equitable distribution of land, many states in India have enacted land ceiling laws, which set limits on the maximum amount of land an individual or family can own.

8. **Forest Land Tenure**: Forest land tenure in India involves various stakeholders, including tribal communities, forest dwellers, government authorities, and conservation organizations. Issues related to forest rights, conservation, and sustainable management are addressed through laws such as the Forest Rights Act, 2006.

1.2.7 **Reference:**

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UNIT-3

1.3 Chapter

AGRARIAN REFORMS AND STRUCTURAL CHANGES IN AGRICULTURE IN INDIA

Objectives

After completing this chapter, you will be able:

- To identify the reasons for initiating land reforms
- To know about the land reform measures undertaken after Independence
- To examine the effectiveness of land reforms in changing the agrarian structure
- To discuss the reasons for success and failure of various land reforms
- To contemplate the perspective of land reforms in the wake of economic liberalization

Structure:

1.3.0 INTRODUCTION

Meaning of Agrarian Reforms and Land Reforms

Agrarian reform refers to changes in the institutional arrangements in the agricultural sector to achieve improvement in the rural areas. It comprises reforms in respect of all such areas which have bearing on agricultural production,

marketing and income distribution in rural areas. Agrarian reforms mean the reforms relating to the abolition of intermediaries between state and the tenants or the actual tillers of the land, redistribution of land through imposition of ceilings on landholdings, security of tenure to tenants, conferring ownership rights to the tillers or cultivators and reorganization of agriculture through consolidation of landholdings. Land reform is a part of the agrarian reform. According to the Food and Agriculture Organzation (FAO) the term, land reform means : "More than redistribution of land either by breaking up large estates to improve consolidation of landholdings, it must include a number of measures to improve the relationship of the man who works the soil to the land he works, including opportunity for land ownership, improved conditions of tenancy, agricultural credit at reasonable rates of interest, reforms of exorbitant rents and taxes and facilities for obtaining agricultural supplies and marketing agricultural products with emphasis on cooperatives".

A sound land reform policy can contribute significantly to agriculture and rural development, and therefore deserves high priority. The land policy should be such that it ensures the scientific and intensive use of land, creates productive employment, reduces disparities in the distribution of land, provides incentives to increase productivity of land, and induces changes in property relations and social structure, with a view to enabling the wider participation and landowners and tenants in the process of sustainable rural development. After Independence, the Government of India formulated a comprehensive land reforms policy for lthe first time in the First Five Year Plan.

As stated above, under British period land tenure systems, the zamindari system was based on exploitation. It created a parasitic class of zamindars which did not do any work on land but snatched away whatever surplus above the minimum subsistence the cultivators produced. The latter were forced to lead a wretched life of slavery and deprivation. Under the ryotwari and mahalwari systems also, the practice of cultivation by tenants became widely prevalent. These tenants were also exploited in a number of ways. Particularly, miserable was the condition of tenants-at-will and sub-tenants.

1.3.1 OBJECTIVES OF LAND REFORMS

The main objectives of implementation of land reform measures have been the reordering of agrarian relations in order to achieve an egalitarian social structure, establishing a new agrarian structure through the abolition of age old intermediary system, elimination of exploitation in land relations, providing security of tenures to the tenants, realizing the goal of conferring the ownership rights over land to the tillers, imposing of ceiling on household landholdings, distribution of ceiling surplus land, enlarging the land base of rural poor, increasing agricultural productivity through consolidation of agricultural landholdings, and infusing an element of equality and democratic spirit in local institution through cooperative farming, etc.

It was basically to stop the exploitation of the actual tillers of the soil and pass on the ownership of land to them, land reforms were introduced in the post-Independence period in India. The government of India defined the objectives of land reforms as follows:

(i) To remove such impediments to increase in agricultural production as arise from the agrarian structure inherited from the past; and

(ii) To eliminate all forms of exploitation and social injustice within the agrarian system, to provide security for the tillers of soil and assure equality of status and opportunity to all sections of the rural population.

Measures contemplated to achieve these objectives were as given below:

1. Abolition of Intermediaries
2. Tenancy Reforms
3. Reorganisation of Agriculture

Tenancy Reforms included the following set of measures: (i) Regulation of Rent, (ii) Security of Tenure, and (iii) Ownership Rights to Tenants and Re-organization of Agriculture included the following policies: (i) Redistribution of Land through fixing ceiling on land (ii) Consolidation of Landholdings, and (iii) Cooperative Farming.

1.3.2 ABOLITION OF INTERMEDIARIES

Even before Independence, it was widely recognised that the main cause of stagnation in the economy was the stagnation in the agricultural sector and this stagnation could, to a large extent, be attributed to exploitative agrarian relations. **The chief instrument of exploitation was the zamindar, patronised and promoted by the alien government.** It was on account of this reason that not only was the desirability of bringing about changes in agrarian relations accepted but was also adopted as a kingpin of land reform policy.

Approximately 57 per cent area of the country was under the zamindari system on the eve of Independence. In some States, legislations were passed for their abolition before 1951. However, most of the work relating to enactment of laws and acquisition of areas was carried out during the period of the First Five Year Plan. In temporary settled areas like Uttar Pradesh and Madhya Pradesh, the task was relatively easy, since adequate land records and administrative machinery already existed. However, in permanently settled areas, such as Bihar, Orissa and West Bengal and in areas under jagirdari settlements, such as Rajasthan and Saurashtra, land records and administrative machinery had to be built up almost from a scratch. Even then, the official documents claimed that intermediaries were completely abolished by the end of the First Plan excepting a few small pockets in some areas of the country. It has been estimated that in all 173 million acres of land was acquired from the intermediaries and, as a consequence, about two crore tenants were brought into direct relationship with the State.

Assessment of Zamindari Abolition

The process of initiating, debating, amending and finally passing the bill for zamindari abolition mostly took a very long time. For example, in Uttar Pradesh, the Zamindari Abolition Act, took four-and-a-half years to become law. However, it goes to the credit of the government that most of the States had passed such Acts before the end of the First Five Year Plan. This possibly reflected the popular sentiment against the zamindars and their exploitative practices. Once the stage of legislation was completed and the stage of implementation started, fresh difficulties had to be faced. Zamindars were not willing to lay down their rights and privileges and turned to courts. As was to be expected, the legal battle between the zamindars and the State governments took an unduly long time. When the zamindars ultimately lost the battle they turned to other delaying tactics by refusing to hand over land records and other related documents.

These delaying tactics apart, even the legislations enacted were full of flaws and the zamindars soon picked up the 'holes' in these legislations. Perhaps the biggest 'hole' was the one pertaining to the permission to obtain land for 'personal cultivation'. The zamindars could even evict tenants for this purpose. **'Personal cultivation' was defined loosely to include personal supervision by the zamindar or members of his family.** The policy laid down in the First Plan was that zamindars could assume land for personal cultivation up to the ceiling limit and tenants could acquire permanent and heritable rights in land only over and above the ceiling limit. With a view to bringing about uniformity in the definition of personal cultivation as adopted in different States, the Second Five Year Plan specified that personal cultivation should have three elements: (i) risk of cultivation, (ii) personal supervision, and (iii) labour.

Though the official documents claim that zamindari has been completely abolished, yet the fact is that it has only changed its 'garb'. The previous zamindars have acquired large areas for personal cultivation on which cultivation is done with the help of hired agricultural labour. **They are now designated as 'big landowners' and along with the rich peasantry, have formed "a new and dominant class of rural capitalists."** In the States where

a ceiling has been fixed as to the amount of land a former zamindar can hold, the ceiling has been kept so high that very few zamindars have been affected. Flaws in the legislation have also enabled them to transfer their land to other members of their families and thus, escape the ceiling law. For example, Daniel Thorner found that in post-reform Bihar, there existed estates of 500, 700 or even 1,000 acres and the older structure of landowner, occupancy raiyat, non-occupancy raiyat, under-raiyat, and bataidar (cropsharer) continued even after the so-called zamindari abolition. Bihar remained a stronghold of large landholders and hierarchical property rights, where "leasing, sub-leasing and evictions are all common."

Despite these observations, there is no denying the fact that after Independence, exploitation and oppression of tenants and actual tillers of the soil has declined steeply and the feudal rural structure has crumbled down. As a result of abolition of intermediaries, the top layer of great absentee landlords has been skimmed off. Particular reference in this context has to be made of the land reform measures initiated by the communist governments in Kerala (in 1959) and West Bengal (in 1967). In Kerala, the government declared eviction illegal within 48 hours of assuming office. Moreover, the sharecroppers were granted the right to purchase land. The zamindar was not allowed to retain more than 10 acres for personal cultivation. The United Front Government of West Bengal acted decisively in favour of the bargadars and agricultural workers and against landlords and rich farmers. Land in excess of ceilings (whether benami or otherwise) was identified and distributed among the peasantry. The right of sharecroppers to secure their land was formally recognised.

1.3.3 TENANCY REFORMS

As stated earlier, tenants can be classified into (i) occupancy tenants, (ii) tenants-at-will, and (iii) sub-tenants. Occupancy tenants enjoy permanent rights like the owner and do not face the fear of eviction as long as they pay rent on time. However, tenants-at-will and sub-tenants are in a precarious position. Their very existence depends on the mercy of landlords and this makes them prone to various exploitative practices adopted by the latter. Therefore, it is to protect these people that special laws have had to be enacted and implemented. The National Sample Survey (8th round) had estimated that in 1953-54, about 20 per cent of agricultural land was under this system. The percentage varied from 6.7 in Madhya Pradesh to 27 in Punjab. In addition, about 35-40 per cent of agricultural land was under oral tenancy, but there are no accurate estimates in this regard. According to K.N. Raj, approximately 50 per cent of agricultural land in India is under one or other form of tenancy.

Under the heading Tenancy Reforms, the following three measures are discussed: (i) Regulation of Rent, (ii) Security of Tenure, and (iii) Conferment of Ownership Rights on Tenants.

Regulation of Rent

In the pre-Independence period, the rent charged by zamindars from the tenants was exorbitant. The British government was merely interested in its share and consequently, gave unlimited powers of suppression to the zamindars to squeeze the tenants. It has been estimated by Brij Narayan that in Punjab as much as 80 per cent of the produce was extracted from the tenants by the zamindars in the form of rent. In Bombay, the rate varied between 40 to 60 per cent. According to H.D. Malviya, in the country as a whole, the rate varied between 34 to 75 per cent.

These highly exploitative rates spelt misery on the toiling tenants who could hardly make both ends meet. As a consequence, legislations were enacted after 1947 to regulate the limits of rents and reduce the burden on tenants. The First Five Year Plan stated that maximum rent should be fixed at one-fourth or one-fifth of the total produce. Excepting Punjab, Haryana, Jammu and Kashmir, Tamil Nadu and Andhra areas of Andhra Pradesh, this limit has been generally observed by all the States. In Punjab and Haryana, fair rent is fixed at one-third of total produce. In Tamil Nadu it is 40 per cent of gross produce for irrigated lands, 35 per cent where irrigation is supplemented by lift irrigation, and

33.33 per cent in other cases. In Jammu and Kashmir, landowners have been divided into two categories — (i) those holding less than 12.5 acres and (ii) those holding more than 12.5 acres. For the former fair rent has been fixed at one-half of total produce while for the latter it has been fixed at one-fourth of total produce for wet lands and one-third for dry lands. In Andhra areas of Andhra Pradesh, fair rent is 30 per cent of total produce for irrigated land and 25 per cent for dry land.

However, legislations fixing maximum limit of rent have been often violated. Because of the strong socio-economic and political hold of the landowners in the countryside, they have been able to extract considerably more rent from the peasants than the rent fixed by the legislations. For example, while in Bihar the maximum limit is 25 per cent of gross produce, sharecroppers are usually required to pay 50 per cent. In Balasore District of Orissa, it was found that sharecroppers had to hand over 50 per cent of gross produce as late as in 1972. Similarly, while law had fixed the maximum rent at 25 per cent of gross produce in West Bengal, sharecroppers continue to pay 50 per cent. This is partly due to the fact that in some areas sharecroppers are not aware of the legal provisions but more importantly because of the fact that they are economically and socially weaker as compared to the landowners and are not in a position to assert their rights. They are aware that any insistence on their part would only invite the wrath of landowners and they will be thrown out of land. In fact, in the absence of security of tenure, any tenant asking for fixation of fair rent will be immediately ejected from land. Even where law provides for security of tenure, tenants are not in a position to take advantage of it because most of the leases are oral and informal. It has been estimated that about 82 per cent of tenancies in the country in 1961 were insecure. The apathy of the governments and their failure to take strong action against landowners who violate legal provisions, only increase the skepticism and fear of the tenants who, therefore, avoid any direct confrontation with the landlords.

Security of Tenure

To protect tenants from ejectment and grant them permanent rights in land, legislations have been passed in most of the States. **Legislation for security of tenure had three essential aims: (1) Ejectments do not take place except in accordance with the provisions of the law; (2) Land may be resumed by an owner, if at all, for 'personal cultivation' only; and (3) In the event of resumption, the tenant is assured of a prescribed minimum area.**

However, as pointed out by P.S. Appu, the degree of protection to tenants afforded by the law in a particular area, depends upon the following important factors:

1. Definition of the term 'tenant';
2. The circumstances in which landowners are allowed to resume tenanted land for cultivation;
3. Definition of the term 'personal cultivation';
4. Status of land records.

In all tenancy laws of the country persons cultivating the lands of others on payment of rent (either in cash or kind or both) are treated as tenants. However, in some States like Uttar Pradesh and West Bengal, sharecroppers (who pay rent by division of produce) are not regarded as tenants. Thus all laws aiming at protecting tenants do not, in any way, help them. A limited right of resumption of land by landowners for personal cultivation was granted in all States excepting Uttar Pradesh and West Bengal. In some States, landowners were permitted to resume land right up to the ceiling limit while in others the permissible limit was below the ceiling limit. Several States also passed laws requiring the landlord to leave a certain minimum area with the tenant as and when he assumes land for personal cultivation. For example, the laws in Kerala, Gujarat, Himachal Pradesh, Maharashtra, Karnataka, Orissa and Tamil Nadu provided that one-half of the tenanted land should be left with the tenant.

The right of resumption combined with flaws in the definition of personal cultivation rendered all tenancies insecure. The landlord could eject any tenant on the plea of personal cultivation. It was on account of this fact that the Fourth Five Year Plan recommended that all tenancies should be declared non-resumable and permanent (except in cases of landholders who are serving in the defence forces or suffering from a specified disability) and penalty should be imposed for wrongful evictions.

Another serious problem that had to be faced related to 'voluntary surrenders'. **Many landlords compelled their tenants to give up the tenancies on their own accord. In this manner they succeeded in circumventing the tenancy laws because no laws can help the tenants if they give up their right voluntarily.** Experience has shown that most of the 'voluntary' surrenders were anything but voluntary. In fact, landlords applied various kinds of threats and pressures on the tenants to surrender the land. Because of their weak socio-economic conditions and abject poverty, the tenants easily succumbed to these pressures. It was on account of this reason that the Fourth Plan recommended that 'voluntary surrenders' should be regulated by the State in such a way that landowners are prohibited from taking possession of surrendered land which could be given over to other eligible tenants selected by the government. This means that all surrenders should be in favour of the government only. However, this provision has been enacted only in the States of Gujarat, Himachal Pradesh, Kerala, Orissa, Karnataka and West Bengal.

Laws relating to security of tenure can be implemented effectively only if correct and up to date land records are available. **A person can claim that he is a tenant only if his name appears as such in the land records. However, it has been observed that in many States either no records of tenancy exist or (in areas where they exist) are incomplete and out of date.** In the States of Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Madhya Pradesh, Maharashtra, Punjab, Rajasthan and Uttar Pradesh there is a provision for annual revision of records. However, several tenants do not try to get their names recorded because of the danger of being evicted. In other States, for example, Andhra Pradesh, Assam, Bihar, Karnataka, Kerala, Tamil Nadu, Orissa and West Bengal there is no provision for annual revision of records which are usually brought up-to-date after long intervals. Thus, the records remain out of date for most of the time.

Ownership Rights for Tenants

It has been repeatedly emphasized in the Plan documents that ownership rights should be conferred on tenants, that is, they should be made owners of the land they cultivate. Accordingly, some States have passed legislations to confer right of ownership on tenants. However, while some States did not adopt legislations for conferment of ownership right, in some others the laws fall short of expectation. West Bengal, Karnataka and Kerala have achieved more success than the other States. In West Bengal, 14 lakh sharecroppers have been recorded under the 'Operation Barga'. In Kerala, applications of 24 lakh tenants for conferment of ownership were accepted. However, on the whole, the progress has been very unsatisfactory. In fact, it was envisaged in the Sixth Plan that legislative measures to confer ownership right to the tenants would be introduced in all States by 1981-82. This is still an issue that has to be tackled.

It has been estimated that as a result of laws conferring ownership rights on tenants in various States, approximately 12.42 million tenants have acquired ownership rights over 6.32 million hectares of land. For a long period of time, many tenants did not exercise their rights to purchase ownership of land they cultivated. The two basic reasons for this state of affairs were as follows: (1) many tenants could not afford to pay the purchase price, and (2) many tenants were 'unwilling' to purchase land. The second reason seems to be of far more consequence than the first one because the State governments did not require the payment of purchase price at one stroke. Frequently, purchase price had to be paid in a number of instalments and over a period of time. The second reason relating to the unwillingness of tenants to purchase land is more basic and once again reflects the dominant controlling power of the landowners *vis-a-vis* the

tenants. In many cases, landlords pressurized the tenants into submitting that they were not interested in the purchase of land. Once this statement was made, the land reverted to the original landowners.

1.3.4 REDISTRIBUTION OF LAND THROUGH CEILING ON AGRICULTURAL HOLDINGS

A ceiling on agricultural holdings means statutory absolute limit on the amount of land which an individual may hold. The imposition of a ceiling has two aspects — (i) ceiling on future acquisition, and (ii) ceilings on existing holdings. The First Plan favoured the former only as the latter was expected to create enormous problems of finance, administration and management. It was only the Second Plan that categorically recommended imposing ceilings on existing agricultural holdings. In this context, the Plan proposed the following questions for consideration:

1. to what lands ceilings should apply;
2. at what levels ceiling should be fixed;
3. what exemptions should be made;
4. what steps should be taken to prevent *mala fide* transfers;
5. what compensation should be paid for land acquired; and
6. how should the acquired land be redistributed.

As far as the first question is concerned, the Plan proposed that ceilings should apply to all future acquisitions of land and all existing agricultural holdings held under personal cultivation (including land under permanent and heritable rights). In determining the levels at which ceilings should be fixed, one has to decide the unit of application; that is, whether ceilings should apply to holdings of individuals or to holdings of families. The First Plan had suggested the adoption of "family holding" which was defined as "an area equivalent, according to local conditions and under existing conditions of technique, either to a plough unit or to a work unit for a family of average size working with such assistance as is customary in agricultural occupations." **The Second Plan recommended that ceiling should be fixed at about three family holdings.**

As far as the third question is concerned, the Second Plan proposed exemptions for following classes of farms: (1) tea, coffee and rubber plantations; (2) orchards where they constitute reasonably compact areas; (3) specialised farms engaged in cattle breeding, dairying, wool raising; etc.; (4) sugarcane farms operated by sugar factories; and (5) efficiently managed farms which consist of compact blocks on which heavy investments or permanent structural improvements have been made and whose break-up is likely to lead to a fall in production.

As far as the question of compensation to owners from whom land is acquired is concerned and as far as basis on which price should be recovered from persons to whom allotments are made is concerned, the Plan asked the States to lay down policy according to their own circumstances. For purposes of redistribution of land the Plan recommended that priority should be accorded to tenants displaced as a result of resumption of land for personal cultivation, farmers with uneconomic holdings and landless workers. To prevent *mala fide* transfers of land, the Plan recommended that transfers of land which have already taken place should be reviewed and for purposes of ceiling the transferred land should be added to the land retained by the landlord.

These guidelines laid down by the Second Plan have been endorsed by subsequent Plans as well. However, they have not been applied uniformly in the formulation of laws by the State governments though laws have been passed in almost all the States providing for a ceiling on landholdings (excepting Nagaland, Meghalaya, Arunachal Pradesh and Mizoram where land is generally held by the community). While some States have accepted the plea for taking family

as the unit for determining the level of ceiling, some States have taken individual owner as the unit. The States adopting the latter alternative (e.g., Andhra Pradesh, Jammu and Kashmir, Orissa, Punjab, Uttar Pradesh and West Bengal) have been more exposed to the risk of *mala fide* transfers as compared to the States adopting family as a unit. Widespread transfers of land have taken the sting out of the ceiling laws and have tended to defeat the aims of the legislation for ceilings. In many States provisions were not made for disregarding of transfers and partitions subsequent to the date of announcement of the decision to impose ceilings on holdings. In some cases, exemptions were too many permitting evasion of ceiling on a considerable scale. Even the legislations (in whatever form they were) were not pursued and implemented effectively by the State governments. On account of these factors, the progress of taking over and distribution of ceiling surplus land has been tardy.

To bring uniformity in the different policies regarding imposition of ceilings being pursued by the States, a conference of Chief Ministers was called in July 1972. Based on the consensus at the conference, a new policy on land ceilings was evolved. The main features of the new policy were as under:

1. Lowering of ceilings to 18 acres of wet land and 54 acres of unirrigated land;
2. The changeover to family rather than the individual as the unit for determining landholding – lowered ceiling for a family of five;
3. Fewer exemptions from ceiling;
4. Retrospective application of the law for declaring benami transactions null and void;
5. In order to insulate the measure from challenge in courts of law, jurisdiction of civil courts has been barred; most of these laws have been included in the Ninth Schedule of the Constitution, which places them beyond any challenge in courts of law on grounds of infringement of Fundamental Rights.

In the light of new policy enunciated at the Conference, ceilings legislations were enacted by all the States except Goa and the North-east region. However, success has been limited due to poor enforcement. For example, under various ceiling laws, till September 2001, 2.98 million hectares of land had been declared surplus of which 2.18 million hectares was distributed to 5.58 million beneficiaries (data for later years are not available). This shows that only less than 2.0 per cent land has been declared surplus while only 1.0 per cent of the total cultivated area has been actually distributed. Thus, the progress in the field of land ceilings has been extremely disappointing. The progress looks all the more unsatisfactory in the light of the estimates of the surplus land. For instance, D. Bandyopadhyay has estimated on the basis of data from agricultural census of 1980-81 that the surplus land under the existing ceiling laws is 5.95 million hectares. If, however, a ceiling of 12 hectares for dry land is assumed, the surplus land works out to 9.84 million hectares. A comparison of actual surplus with these estimated figures of surplus shows how poor the progress has been.

Since much of the land distributed under ceiling laws is of poor quality, the assignees have to make heavy investment for more efficient cultivation. Thus, the allottees are provided assistance at the rate of ₹ 2,500 per hectare for land development, purchase of inputs and meeting other needs.

According to the Eighth Five Year Plan, as far as the question of land ceilings is concerned, the two aspects needing urgent attention are: (i) detection of surplus lands, hitherto unavailable because of recourse to evasive methods like benami transfers, partitions, fraud, collusion with official machinery, etc.; and (ii) ensuring that the allottees retain possession and there is severe penalty for dispossession. To solve these issues, the lacunae in the laws will have to be removed. Suitable creative options will have to be built into the law so that once the land is declared surplus, unless *mala fide* is established against the official machinery concerned, the land would vest in the government, and it would be open to the courts to award only compensation to the landlord.

The Ninth Five Year Plan and the Tenth Five Year Plan points out a new problem that has cropped up in recent years in the wake of the economic liberalisation. In certain States like Karnataka, the industry and the large farmers are being given exemption from ceiling laws without seeking the permission of the Government of India. This would certainly go against the interest of the poor as it would increase landlessness and depress agricultural wages. Hence, this issue requires close examination, before such exemptions are given.

The Case for Ceilings

1. The Social Rationale: The basic rationale for ceiling on agricultural holdings rests in the social field. It is argued that in a poor economy where the supply of land is limited while the number of claimants is excessively large, it is socially unjust to allow a small number of people to hold a large part of land and thereby, subjugate the interests of millions of labourers to the interests of this handful minority. A large number of people belonging to this privileged class of landlords function merely as absentee landlords and their land continues to be cultivated by landless labourers and petty peasants. Therefore, the social inequalities and exploitation cannot be eliminated unless and until land is taken away from the hands of the landlords and handed over to the toiling masses. The basic aim of the ceiling laws is to accomplish this objective through elimination of "excessive ownership of land". Even otherwise since land is scarce in relation to the demand for it, it is best to distribute it among its users rather than allow part of it to go to non-users who would benefit merely from their title to its ownership without performing any identifiable functions.

2. Improving the Position of the Poor: The income of the poor who receive land as a result of redistribution (consequent upon imposition of ceilings) is expected to rise pulling them above the poverty line. A study by R. Sinha and others showed that with equitable distribution of land "the per capita income of the rural poor is more than doubled, as is their share in total personal incomes. Both the per capita income level and income share of the middle group are increased by more than half. The rural top class, on the other hand, suffers a loss of one-third in incomes and income-shares." A practically similar argument has been forwarded by the FAO in its widely quoted publication titled *Agriculture Toward 2000*. According to FAO, "Redistribution of only 5 per cent of farmland in India, coupled with improved access to water, could reduce rural poverty level by 30 per cent under what than would otherwise be, so that in Indian conditions land and water reform would be a key approach." This shows that redistribution of land is likely to make a fundamental improvement in the position of the rural poor.

3. The Efficiency Argument: There are economists who maintain that small farms can be more efficiently managed in comparison to large farms. For example, C.H. Hanumantha Rao has pleaded for redistribution of land after careful examination of Farm Management Data. According to Rao, small farms also offer more opportunities for employment because they are less capital intensive as compared to large farms. Therefore, even if large farms are shown to produce more output per acre as compared to small farms, they cannot be considered more efficient in a situation of widespread unemployment and underemployment as obtains in this country.

4. Inculcating the Spirit of Cooperation: It has been argued that once surplus land is obtained after fixation of ceiling limit, it can be distributed among the beneficiaries on the condition that they form cooperatives for its cultivation and management. This practice will enable the hitherto landless labourers and petty peasants to learn the techniques of social management and joint cultivation on the one hand, and enable them to realize the benefits of large-scale farming as well.

Case Against Ceiling

The case against ceiling rests basically on two grounds: (i) the break-up of large holdings into a number of small holdings will affect the economic efficiency of the farms adversely and production will decline. In a nutshell, the advantages of large-scale farming will be lost; and (ii) the growth of output and employment may also slow down in

the long run owing to the reduction in savings and investment, because the small farmers consume away a large proportion of their income than do the large farmers. However, both of these arguments are not correct. As pointed out by C.H. Hanumantha Rao, in India there is as yet no clear evidence of economies of scale. Therefore, to argue that productivity will decline as a result of break-up of large holdings into small holdings, is not correct. Moreover, evidence suggests that farmers are able to augment their operational holdings in response to the changing technological and economic factors. As far as the second argument is concerned, Rao points out that even if this possibility is admitted, the share of poorer classes in the long run may increase as compared to what they would have obtained in the absence of redistribution of land. This is likely to increase their consumption and, as a consequence, their efficiency. This, in turn, would mean an increase in output-capital ratio. Therefore, "the decline in saving, if any, as a result of improved distribution may be more than compensated by improvement in the output-capital ratio, so that output may grow faster with an improved distribution. Further, such a growth process ensures that the gains of development accrue to the poorer sections."

1.3.5 REORGANIZATION OF AGRICULTURE AND STRUCTURAL CHANGES OF LAND

Agrarian structure is undoubtedly one of the most important determinants of farm efficiency. Therefore, it is believed that reorganization of agrarian structure is an essential and unavoidable necessity for agricultural development in an agrarian society like ours but its reorganization is a stupendous task. Agrarian structure does not merely relate to ownership of land, but in a broad sense, it includes the entire gamut of socio-economic structure of a pre-dominantly agrarian economy. However, agrarian structure is developed over a period of time in regular and renewed basis to changing times and ever improving process of technological developments. The pattern of landholding and the emerging agricultural activities indeed hold key to the economic development of a country predominantly dependent on agriculture. Especially, the structure of landholding at any point of time has tremendous impact on the rural economy and rural population whose livelihood and food security are directly influenced by the pattern of land structure and their management. Therefore, if appropriately structured, it helps a society to attain rural economic growth and its equitable distribution. This is because, there exists linkages between agrarian structure, agricultural growth and rural poverty. States where agrarian structure is more equitable, productivity is seen to be higher and poverty levels appears to be lower/reduction of poverty tends to be higher. Needless to mention that given a conducive agrarian structure, a high rate of exclusive growth of agriculture could reduce the poverty levels considerably.

However, despite some progressive (very limited) reforms in land at the all India as well as State level (Orissa) inequitable distribution of land ownership and operational holdings continues and are glaringly visible adequately reflected in the NSS and Agricultural Census Reports released at different points of time. Such skewed distribution of land indeed is inimical to agricultural production, productivity, use of modern irrigation and farm technology. Thus, arises existence of numerically small number of large holdings having command over bulk of operated area *vis-à-vis* numerically large number of small landholders having command over lower proportion of the total operated area and consequently, the debate (1960s') over the efficiency of small farms over the large ones on per acre productivity basis; and the so called 'inverse relation'.

1.3.6 AGRICULTURAL HOLDINGS IN INDIA

Table 1 gives details on the size and number of holdings and area operated by them. This table shows that the average size of of holdings is very small in India. It was merely 1.33 hectares in 2000-01 and this fell further to 1.23 hectares in 2005-06. As is clear from col. (4) of the table, 64.8 per cent operational holdings in 2005-06, were marginal (less than one hectare). If small and marginal holdings (i.e., holdings less than two hectares) are considered together we find that as many as 83.3 per cent holdings belonged to this category and they had 41.1 per cent operated area

(calculated from col. 6) under them. Thus, while more than four-fifths of operational holdings in India were small and marginal in 2005-06, area operated by them was just about 40.0 per cent. As against this, while only 0.8 per cent holdings were large (more than 10 hectares), they had 11.8 per cent of area under them. This shows extreme inequalities in land ownership in India. Not only are the majority of holding in India very small, they are also fragmented into a number of units.

Table 1

Number of Operational Holdings and Area Operated by Size Classes — All India (2000-01 and 2005-06)

S. No.	Category of Holdings	Number of Holdings – (millions)		Total Area Operated (million hectares)		Average Size of Holding (hectares)	
		2000-01	2005-06	2000-01	2005-06	2000-01	2005-06
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Marginal (Less than 1 hectare)	75.41 (62.3)	83.69 (64.8)	29.81 (18.7)	32.03 (20.2)	0.40	0.38
2.	Small (1.0 to 2.0 hectares)	22.69 (19.0)	23.93 (18.5)	32.14 (20.2)	33.10 (20.9)	1.42	1.38
3.	Semi-medium (2.0 to 4.0 hectares)	14.02 (11.8)	14.13 (10.9)	38.19 (24.0)	37.90 (23.9)	2.72	2.68
4.	Medium (4.0 to 10 hectares)	6.58 (5.5)	6.38 (4.5)	38.22 (24.0)	36.58 (23.1)	5.81	5.74
5.	Large (10.0 hectares and above)	1.23 (1.0)	1.10 (0.8)	21.07 (13.2)	18.72 (11.8)	17.1	17.1
	Total (100.0)	**119.93 (100.0)**	**129.22 (100.0)**	**159.44 (100.0)**	**158.32**	**1.33**	**1.23**

Note: Figures in parentheses indicate the percentage to total.

Source: Government of India, *Agricultural Statistics at a Glance,* 2011 (Delhi, 2011), Table 15.1, p. 297.

Causes of Sub-division and Fragmentation of Holdings

Sub-division refers to the division of land among heirs on the death of the owner of the land. As would be clear, with the passing of each generation the land gets subdivided further and further and after some generations only tiny plots are left with the descendants of a large landowner. What is worse, each heir gets a part of each individual field of the owner. Thus, a person gets one tiny plot at one place, another tiny plot at a second place, and so on. This leads to fragmentation of holdings. The causes of subdivision and fragmentation of holdings in India are enumerated below:

1. Laws of Inheritance: The laws of inheritance in India are such that all children have an equal share in the property of their father. Previously only sons had a share but with the passing of the Hindu Code Bill, even daughters now have an equal share in father's property like sons. The inevitable consequence of this law of inheritance is that farms get split up further and further with every passing generation.

2. Pressure of Population: The population of India has been increasing at a very rapid pace while land under agriculture has increased only marginally. Because of the unsatisfactory expansion of the non-agricultural sector and its inability to absorb the rising population, more and more people have been forced back on agriculture. This has resulted in subdivision of holdings.

3. Decline of Joint Family System: The break-up of the Hindu joint family system in recent decades has also led to subdivision of land. Whereas, previously land was held together even though the number of family members increased from generation-to-generation, the break-up of joint family system now leads to sub-division and fragmentation of holdings with the passing of each generation.

4. Farmers' Indebtedness: Most of the farmers in India are neck-deep in indebtedness. Frequently, they are forced to sell off parts of their land to pay-off the debts. It has also been found that moneylenders incite the illiterate farmers into taking loans against their land. Since the farmers are many times not able to pay-off the debt, the land (or parts of land) passes into the hands of the moneylenders. Thus the land continues to get subdivided and fragmented quite frequently.

5. Psychological Attachment to Land: In India, all persons of a rural household are sentimentally and psychologically attached to land. Every son wants to have a share in father's land and is not willing to accept payment in lieu of land. This leads to sub-division and fragmentation of holding even when it could have been avoided.

6. The Practice of Crop-sharing. In India, many landowners do not cultivate the land themselves. Instead they lease it out to tenants, often to a number of tenants in a bid to avoid trouble and escape the land reform laws. Thus though the size of holdings on ownership basis remains the same, they are divided into small pieces on operational basis.

One can get an idea about the ongoing process of sub-division of holdings in India from the fact that while in 1976-77, 54.6 per cent operational holdings were marginal (less than one hectare), in 1985-86, 57.8 per cent and in 2005-06, 64.8 per cent of operational holdings were marginal. Considering small and marginal holdings together (less than two hectare), we find that their percentage rose from 72.7 per cent in 1976-77 to 76.2 per cent in 1985-86 and further to 83.3 per cent in 2005-06. As against this, the percentage of large holdings (more than 10 hectares) fell from 3.0 per cent to 2.0 per cent and then to 0.8 per cent over the same period.

Disadvantanges of Sub-division and Fragmentation

Small and fragmented holdings impede agricultural progress. The main disadvantages of sub-division and fragmentation are the following:

1. Wastage of Land: Because of subdivision and fragmentation, the size of plots becomes so small that sometimes it is not possible to cultivate on them. It has been estimated that 6 per cent of land in Punjab is wasted on this account. In Ratangarh district of Maharashtra, plots as small as 0.006 acre have been found to exist. Obviously it is not possible to cultivate on such tiny plots. In addition to such wastage, another 3-5 per cent of land is wasted in drawing boundaries and hedges between small, tiny plots.

2. Difficulties in Modernisation: Because of the small size of farms, it is not possible to make use of new technological innovations in the field of agriculture. The application of new methods of production requires ample doses of fertilisers which, in turn, require sufficient irrigation facilities. However, because of fragmentation, it is frequently not possible for the farmer to make proper arrangement of irrigation in all plots belonging to him. As a consequence, adoption of new agricultural technology is hindered.

3. Difficulties in Land Management: Because of subdivision and fragmentation, it becomes difficult for the farmers to manage all their plots of land efficiently. There is also considerable wastage of time in transporting seeds, manures, fertilisers, pesticides and other agricultural inputs (like agricultural machinery) from one plot of land to another and extra expenses have to be incurred on this account.

4. Disputes Over Boundaries: Existence of small and fragmented farms is a cause of frequent disputes and struggles. Disputes over boundaries are very common in villages. Since personal supervision over separate, fragmented plots is not possible, complaints regarding theft of crops, grazing by animals belonging to other villagers, etc., are also often heard. As a consequence, peace of village life is disturbed.

5. Disguised Unemployment: Small plots of land fail to provide work to all members of the farmer's family. However, in the absence of alternative employment opportunities, they are forced to depend on the land. This causes disguised unemployment.

6. Low Productivity: Subdivision of land into tiny plots results in low agricultural productivity. Instead of adopting new techniques, the farmer is compelled to use the age-old methods of production. As a consequence, he remains poor.

1.3.7 CONSOLIDATION OF LANDHOLDINGS

This measure is designed to solve the problem of fragmentation of holdings. The method adopted is to grant one consolidated holding to the farmer equal to the total of the land in different scattered plots under his possession. Initially the programme of consolidation was started on a voluntary basis but was later made compulsory. However, progress under the programme has been very slow. As noted by the Tenth Plan, consolidation has to be a continuing process but most States have stopped consolidation proceedings. As on March 31, 2002, consolidation of holdings had taken place only in an area of 66.10 million hectares against a total cultivable area of 142 million hectares. The bulk of the land consolidated has been in Punjab, Haryana, Maharashtra, Uttar Pradesh, Bihar and Orissa. In some States not even a beginning has been made. In fact, only 15 States have passed laws for consolidation. Those not having laws are Andhra Pradesh (in select areas of Andhra Pradesh), Tamil Nadu, Kerala, Pondicherry and the North-eastern States.

Though **consolidation of holdings is a very useful instrument to solve the problem of fragmentation,** the task is not completely accomplished unless laws are passed to prevent fragmentation in future. In the absence of such laws, land can be subdivided and fragmented again on account of the factors already listed above, *viz.*, law of inheritance, pressure of population, etc. Keeping such considerations in view, legislations have been passed in most of the States preventing subdivision and fragmentation beyond a certain minimum limit. This minimum limit is known as the 'standard area' and has been fixed at different levels by different State governments. To ensure that size of holdings does not fall below this minimum limit, necessary provisions have been made in the Consolidation Acts in Assam, Bihar, Gujarat, Rajasthan and parts of Andhra Pradesh, and in the Land Reforms Act in Uttar Pradesh and West Bengal.

Critical Evaluation of the Programme

As stated above, **consolidation has been done only on 1/3rd of the consolidable area of the country.** Only in Punjab and Haryana the task has been completed so far. In some States the task has not even been initiated. Thus, the progress of the programme is highly unsatisfactory. This is because of the following factors: (1) Since quality of soil differs from land-to-land, it became difficult to allot land of the same quality and productivity to the farmer as was held by him previously. Allotment of consolidated land of equal area as the fragmented holdings does not mean that land of the same productive value has been allotted. This consideration has posed a lot of serious problems and it has become necessary to devise a number of methods of valuation (mostly based on market value or rental value) to bring different classes of land on a comparable basis; (2) The farmer is generally attached to his land emotionally and sentimentally. Therefore, he does not willingly cooperate with the Consolidation Officer; (3) Many State governments were pre-occupied with immediate land reform programmes, *viz*., abolition of intermediaries, tenancy reforms, etc., and accordingly, postponed

action on consolidation measures; (4) In many areas reliable and up to date land records are not available. Consequently, disputes arise in fixing the ownership of land; and (5) Many States lack adequate and trained staff to carry out the programme of consolidation. This has delayed the implementation of the programme.

A common complaint heard in consolidation proceedings in villages is that the rich and the influential often manage to get fertile and well situated land, whereas the poor and uninfluential get inferior lands. According to M. L. Dantwala, this process is helped by the provision of the law as the so-called **'major area rule'** requires that the consolidation holdings of a landholder should be built around the plot or contiguous plots which form the largest proportion of his total land. This acts to the disadvantage of the poor. In addition to this, the programme of consolidation has helped in strengthening the position of the large landowners, *vis-a-vis,* the poor in a number of other ways. As observed by the Report of the Task Force on Agrarian Relations (1973), "A major weakness of the programme was that consolidation was done without taking effective steps to ensure security of tenure to tenants, particularly share-croppers. In the result, consolidation of holdings has led to large-scale ejectment of tenants. For one thing, when holdings were fragmented even a resident landowner found it difficult to cultivate personally all the plots of land constituting his fragmented holding and, therefore, perforce he had to lease out some portions of his holdings to sharecroppers. After the holdings were consolidated, the landowner found it both feasible and profitable to cultivate 'personally' the entire area and he spared no effort to get rid of the sharecroppers. For another, **the relationship of sharecropping tenancy subsisted in respect of a specific plot of land easily identified in the field. Once consolidation was effected, the identity of the particular plot that the sharecropper had been cultivating was lost and he could be automatically ousted from the land.** Thus, the consolidation of holdings has often turned out to be the *coup de grace* for the sharecroppers."

1.3.8 COOPERATIVE FARMING

This reform has been advocated to solve the problems created by sub-division of holdings. The idea is that farmers having very small holdings should join hands and pool their lands for the purpose of cultivation. In Table 20.1 above it has been indicated that 83.3 per cent of holdings in India, are below 2 hectares and 41 per cent of total operated area is under them. Cultivation on such small farms cannot be considered profitable. At most, they can only provide a level of subsistence to the farmers. However, if such small and marginal farmers pool their land and resources, implements, etc., and cultivate jointly, they can reap profits of large-scale farming.

Arguments in Favour of Cooperative Farming

The strongest argument in favour of cooperative farming and, in fact, **its basic rationale is that it is an effective method of solving the problems created by small, uneconomic holdings.** Holdings sub-divided into small and non-viable farms can be pooled together through this method and joint cultivation on the pooled land enables the members to reap all benefits of large-scale farming. Since the agricultural inputs like seeds, fertilisers, manures, etc., are purchased by the society in bulk they are likely to cost less. Therefore, agricultural inputs can be made available to the members at a cheaper rate. Big agricultural implements and machinery like tractors, harvesting machines, etc., which small individual farmers cannot purchase can now be purchased on a collective basis by the society and can be rented out to individual members as and when the need arises. Agriculture can be planned on a more scientific basis and advantages of technical innovations and new agricultural practices can be reaped on a fuller basis. The task of looking after the crops and crop-planning can be done more satisfactorily. It is often observed that the personal labour of the farmer, bullocks and other resources remains underutilised when land is distributed into small uneconomic holdings. However, when all land is pooled together, as under cooperative farming, all such resources can be utilised fully and to the best advantage. The spare time available with the farmer and his family members can also be more fruitfully employed.

Another advantage of cooperative farming is that the marketable surplus of foodgrains and industrial raw materials can be obtained more easily from large farms and can be transported to the market on a bulk basis in an easier way. Thus, agricultural surplus can be located and transported more easily. It also becomes easier to obtain agricultural data from large cooperative farms instead of subdivided and fragmented small farms. This increases the reliability and authenticity of agricultural data which is a *sine qua non* of all good agricultural planning.

In addition to all these economic benefits, there are social and political arguments also that can be put forward in favour of cooperative farming. The adoption of cooperative farming is likely to inculcate the spirit of cooperation among members of the society which can go a long way in inspiring mutual confidence, collective action, joint thinking and feeling of fraternity and friendship among the members. It is only such cooperative spirit that can lay the foundations of a strong democracy. In recent years, there has been much talk of 'public participation in planning' and 'planning from below'. These will remain mere slogans unless and until the spirit of cooperation develops at the village level.

Critical Evaluation of Cooperative Farming in India

A number of recommendations were made in the first three plans to encourage cooperative farming in India. The government offered a number of incentives and facilities for the development of these societies like financial assistance, subsidies, technical assistance, preference in the supply of improved seeds, fertilisers and other materials. In fact, cooperative farming was seen as a panacea for all ills of rural sector and was propounded with much enthusiasm and excitement. However, the progress was extremely slow and disappointing. Thus, at the end of June 1969, there were only 8,160 such societies with 2,20,047 members and a total area of 4,20,783 hectares which was only 0.38 per cent of cultivated land. This slow growth dampened the spirits somewhat and the Fourth Plan was forced to admit the failure of the programme in these terms:

"Cooperative farming, on a voluntary basis, has been officially accepted as the way out (in tackling the problem of full and proper utilisation of the land surface). However, so far no substantial progress has been made. Problems of motivation and organisation met with in this approach have not yet been successfully solved on any significant scale. Moreover, it has not been sponsored actively enough by any large group or body of opinion within the country. Therefore, except for continuing the present schemes of encouragement of cooperative farming it has not been possible to propose any additional programmes in this Plan."

Similar sentiments were expressed in the survey of 22 cooperative societies organised by the Planning Commission under the auspices of the Programme Evaluation Committee and the Nijalingappa Committee which examined the working of 34 cooperative societies. It seems that the motivations behind the formation of cooperative farming societies were not genuine. In most cases, they were formed not by poor and small farmers but by large farmers with a view mainly to receiving certain benefits from the government. In some cases societies were organised by the members of the same family to evade laws. Very few farming cooperatives are true cooperatives formed by small cultivators. Their experience is not too heartening because they are 'too small and too poor'.

The working of the cooperative farming societies has also revealed that their management lacked the necessary professional skill and the willingness to do the work effectively. Inefficient administration combined with corrupt practices eroded the confidence of the members of the society who were soon disillusioned by the experiment of cooperative farming. Thus, there was a reverse tendency in operation — break-up of the society and reversal to individual farming. This failure discouraged other peasants also who were either planning to join the existing societies or to form new societies.

1.3.9 EVALUATION OF LAND REFORMS IN INDIA

We have discussed the various measures of land reforms introduced in India and have also pointed out the reasons for their failure at relevant places in this chapter. In this section, we can sum up the important criticisms into the following categories: (1) snags in legislation, (2) lack of political will, and (3) apathy of the bureaucracy.

Snags in Legislation

1. Definition of 'Personal Cultivation': As noted in the section on 'Assessment of Zamindari Abolition' the definition of personal cultivation was highly unsatisfactory. Nowhere did it mean what it should have actually meant, i.e., cultivation by one's personal labour. In most of the States, personal supervision was taken to be a part of personal cultivation and even this did not require supervision by the landowner himself. It would suffice if supervision was done by any member of the landlord's family. Not even the presence of the landowner in the village was considered necessary. These flaws in the definition of personal cultivation have been a major factor in large-scale ejectment of tenants.

2. Limits for Retention of Land for Personal Cultivation: Not only was the definition of personal cultivation defective, intermediaries were allowed to retain substantial areas of land for personal cultivation. This enabled zamindars to resume large areas of land for cultivation defeating the very object of zamindari abolition. Only their name has changed. While previously they were known as zamindars, they are now known as 'absentee landlords'.

3. Transfer of Land to Family Members: To escape the laws relating to land ceiling the zamindars indulged in large-scale transfer of land to their family members. For quite some time there was no law in some States to prevent such transfers. In States where such laws existed, the benevolent definition of personal cultivation provided sufficient scope for zamindars to circumvent them. This reduced the effectiveness of the ceiling laws considerably.

4. Definition of Tenant Inadequate: In some States, share croppers were not accorded the status of tenants though they cultivated a substantial part of land. Therefore, laws relating to tenancy reform could not be used for protecting their rights. It has also been estimated that a considerable number of tenancies in India are oral and informal. Tenants cultivating such land are not in a position to prove that they are the actual tillers of soil because their names do not appear in land records.

5. The Problem of 'Voluntary Surrender': Landlords often forced their tenants to voluntarily surrender the land being cultivated by them. For this purpose, tenants were often threatened and even beaten up. The poor tenants had no strength to match the force of landlords and often evicted the lands under such pressures voluntarily. As would be obvious, law cannot help tenants if they surrender land on their own accord. Legislations adopted by the State governments had no way to stop this practice for a long time. It was only in the Fourth Plan that recommendations were made to the effect that voluntary surrenders can be done only in favour of the State and landowners should not be allowed to take possession of surrendered land. However, this recommendation was enacted into law only by a handful of States.

6. Inadequacies in Ceiling Laws: As noted earlier, the levels of ceilings as among different States and within different areas of the same State differed considerably. This created a lot of confusion and frequent disputes. Accordingly, a conference of State Ministers had to be called in July 1972, to bring uniformity in ceiling laws. However, till that time considerable damage had already been done and various types of transfers and other underhand dealings had left only small areas as surplus. The list of exemptions from ceiling laws was also unduly large.

Lack of Political Will

The effective implementation of any law requires some amount of political will and determination on the part of the authorities. Radical laws like the land reform laws which aim at restructuring the entire property relations in the countryside require a substantial amount of courage and determination for implementation. Given the tardy progress of land reforms, it seems that the governments were not interested in the implementation of the legislations enacted but were merely trying to wear the progressive and socialistic look while continuing to function under the directions and pressures of large farmers. The political advantages of adopting this two-faceted policy of expressing sympathy to the poor while aligning with the rich outweighed all other considerations and this reduced all land reform measures to a mere farce. The Report of the Task Force on Agrarian Relations had this to say in this regard:

"Enactment of progressive measures of land reforms and their efficient implementation call for hard political decisions and effective political support, direction and control. In the context of the socio-economic conditions prevailing in the rural areas of the country, no tangible progress can be expected in the field of land reform in the absence of the requisite political will. The sad truth is that this crucial factor has been wanting. The lack of political will is amply demonstrated by the large gaps between policy and legislation and between law and its implementation. In no sphere of public activity in our country since Independence has the hiatus between precept and practice, between policy pronouncements and actual execution been as great as in the domain of land reforms. With resolute and unambiguous political will, all other shortcomings and difficulties could have been overcome; in the absence of such will even minor obstacles become formidable roadblocks in path of Indian land reform. Considering the character of the political power structure obtaining in the country it was only natural that the required political will was not forthcoming." (emphasis added).

This forthright and frank assessment of the Task Force Report should act as an eye-opener. It brings out clearly that effective implementation of land reforms is possible only if the required political will is forthcoming. In its absence, all land reform legislations are mere pieces of paper.

Apathy of Bureaucracy

Side by side with the lack of political will goes the apathy of bureaucracy in implementing the land reforms. In fact, both are intricately linked up together and the latter flows from the former. This would be evident from the fact that wherever enthusiastic administrators sought to implement the land reforms strictly they were immediately transferred elsewhere by the political bosses. This dampened the spirits of the dynamic administrators in bureaucracy and had an overall demoralising effect. It has also been observed that a number of persons in the higher echelons of the administration are substantial landowners themselves. Even the village functionaries like patwaris are petty landowners themselves and have, accordingly, not cooperated wholeheartedly with the law implementing agency. The attitude of bureaucracy towards land reforms has generally been 'lukewarm' and it has tried to 'play safe' by aligning with the large landlords who have served as faithful 'vote suppliers' to the ruling party. The corrupt political, bureaucratic, and large farmer lobby nexus has served the interests of the participants very well and all of them have benefited from it. The administrator has joined hands with the politician to grab land declared surplus and meant to be distributed among landless and rural poor. The Har Charan Singh Committee Report on Punjab submitted in 1973, made public how land intended for landless and Harijans was being grabbed by prominent politicians and government officials at extremely low prices.

This shows that the very instruments of implementing land reforms have turned into instruments of subverting land reforms. The nexus between the politicians, administrators and large landowners of which we have talked above has brought the "rich peasant power" into the limelight. This rich peasant power dominates State governments, regional

and local administration and serves as the principal instrument of land grabbing and as a strong impediment in the implementation of land reforms.

1.3.10 SUMMARY

This Chapter brings out the concepts of land reforms as an institutional arrangement in agriculture. Of late, land reforms have been brought to include reforms in tenurial arrangements by abolition of intermediaries, tenancy reforms, ceiling on landholdings, distribution of ceiling surplus land, consolidation of landholdings and cooperative farming. Then it brings out the objectives of implementation of these land reform measures in India for establishing a new agrarian structure. The realization of these objectives is expected to improve and modernize agriculture, boost its productivity and develop the rural economy. At last, the chapter evaluates the implementation of various land reform measures.

1.3.11 SELF ASSESSMENT QUESTIONS

1. Examine the realization of the objectives pertaining to implementation of land reform measures introduced in India.
2. Briefly discuss the impact of abolition of Zamindari in the 1950s.
3. Define ceiling on landholdings. To what extent have the objectives of ceiling on landholdings been achieved?
4. Explain the rationale of the scheme of consolidation of landholdings for improving agricultural production and productivity in India.

Key Terms

Green Revolution: The Green Revolution, initiated in the 1960s, aimed to increase agricultural productivity through the use of high-yielding varieties of seeds, irrigation, fertilizers, and pesticides. This led to a significant increase in food production, particularly in staple crops like wheat and rice, and helped India achieve food self-sufficiency.

Land Reforms: Land reforms were introduced to address the issue of unequal distribution of land and to provide land to landless farmers. These reforms included land redistribution, tenancy reforms, and consolidation of landholdings.

Liberalization and Economic Reforms: In the 1990s, India introduced economic liberalization policies that aimed to open up the economy to foreign investment and promote market-oriented reforms. This included reforms in the agricultural sector to encourage private investment, improve infrastructure, and promote modern farming techniques.

National Agricultural Policy: The Government of India has periodically introduced National Agricultural Policies aimed at addressing various issues in the agricultural sector, such as productivity enhancement, water management, crop diversification, and market access.

Technology Adoption: Various initiatives have been undertaken to promote the adoption of modern agricultural technologies, including mechanization, biotechnology, precision farming, and ICT tools, to improve productivity and efficiency in farming practices.

1.3.12 Reference:

1. Land Economics-Renne

2. Progress of Land Reforms-U.N.O

3. Economics of Agricultural Production and Resource Use-Heady

4. Economic Organisation of Agriculture-Schultz

5. Introduction to Economics of Agriculture-Black

6. Economics of Agriculture-Cohen

7. Introduction to Agricultural Economic Analysis-Bishop and Toussiant

8. Agricultural Credit-Belshaw

9. Agricultural Price-Thompson and Foots

10. Readings in Agricultural Development (Ed.)-Khurgo

11. Agriculture in Economic Development (Ed.)-Eicher and Witt

12. Readings in Agriculture-Pramit Choudhury

13. Agricultures in an Unstable Economy-Schultz

14. Agricultural Price and Income Policy- Schultz

15. Marketing of Farm Products-Shepherd

1.4 Chapter

AGRICULTURAL PRODUCTION IN INDIA

Objectives

After completing this chapter, you will be able:

- To explain the trend in agricultural production
- To examine the trends in productivity
- To identify the causes of low agricultural productivity in India
- To examine the measures taken to raise the level of productivity.

Structure:

1.4.0 INTRODUCTION

Agriculture continues to be the single most important livelihood and a way of life for the majority of population in the country. Over decades starting from its planning period, India's Agricultural Policy has been focusing on self-sufficiency and self-reliance in foodgrains production. Considerable progress has been made on this front. Foodgrains production rose from 52 million tonnes in 1951-52 to 244.78 million tonnes in 2010-11. But the share of agriculture in real GDP has fallen relative to industry and services sector. To feed the rising number of mouths of rapidly growing population of our country, there is a need to redouble our efforts to ensure a higher agricultural growth rate beyond 4.0 per cent of average growth in future. This is a prerequisite for inclusive growth, reduction of poverty levels, development of the rural economy and enhancing of farm business income.

1.4.1 TRENDS IN AGRICULTURAL PRODUCTION AND PRODUCTIVITY

Agricultural production has two components — foodgrains and non-foodgrains. The former contributes approximately two-thirds of total agricultural production. In the Index Number of Agricultural Production (triennium ending 1981-82 = 100), the weights assigned to foodgrains and non-foodgrains are 62.9 and 37.1 respectively. The most important component in the foodgrains category is rice (weight 29.7) followed by wheat (weight 14.5). In non-foodgrains category, oilseeds constitute the most important group (weight 12.6). Sugarcane carries a weight of 8.1 while cotton carries a weight of 4.4.

Trends in agricultural production and productivity are presented in Tables 1 and 2 respectively. Let us consider Table 1 first. As far as foodgrains output in concerned, the total production increased from 50.8 million tonnes in 1950-51 to 187.0 million tonnes in the Eighth Plan (annual average) and further to 202.9 million tonnes in the Ninth Plan (annual average). However, because of drought conditions in the first year of the Tenth Plan 2002-03, the foodgrains output declined to 174.8 million tonnes but again rose to 213.2 million tonnes in 2003-04. The foodgrains output in the Tenth Plan (annual average) was 202.2 million tonnes — even less than the annual average recorded in the Ninth Plan. However, the last year of the Tenth Plan, 2006-07, registered an impressive foodgrains output of 217.3 million tonnes. This rose further to 234.4 million tonnes in 2008-09 but fell to 218.2 million tonnes in 2009-10. **Foodgrains production touched the record level of 241.6 million tonnes in 2010-11** and, according to Third Advance Estimates for the year 2011-12, is likely to exceed 252 millon tonnes in 2011-12.

For the purpose of analysis, the entire table can be divided into two parts: (*i*) the period up to the end of the Third Plan, and (*ii*) the period after the Third Plan. **The latter is often referred to as the period of the 'Green Revolution' and as would be clear from Table 1, is marked by rapid strides in wheat.** Production of wheat which averaged only 9.7 million tonnes per annum in the Second Plan and 11.1 milllion tonnes per annum in the Third Plan, rose to 25 million tonnes per annum in the Fourth Plan. The momentum has been consistently maintained with wheat production averaging 70.2 million tonnes per annum in the Tenth Plan. Wheat production is likely to exceed 90 million tonnes in 2011-12 – the last year of the Eleventh Plan. Rice production has also picked up considerably since 1980s, although there have been setbacks in some years. Rice production increased from 35.1 million tonnes in Third Plan (annual average) to 85.6 million tonnes in Tenth Plan (annual average). It is expected to touch 103.4 million tonnes in 2011-12 – the first year in the entire planning period that is likely to see rice production of more than 10 crore tonnes. As is clear from Table 1, jowar and bajra have shown erratic trends over the planning period as a whole with production remaining almost stagnant for most of the time. Maize also exhibited stagnant production levels for a considerable period of planning. However, the introduction of hybrid maize seeds in recent years has suddenly pushed up production. Maize production which was 15.1 million tonnes in 2006-07 rose to as high as 21.3 million tonnes in 2010-11. **Because of the high productivity of the hybrid seeds, the overall productivity of maize has risen considerably in recent times** (from 1,912 kgs per hectare in 2006-07 to as high as 2,507 kgs per hectare in 2010-11). As a result , area under maize has risen significantly (at the cost of other coarse cereals like jowar, bajra, ragi and small millets). As far as pulses are concerned, their requirement in India is estimated at about 17 million tonnes. However, the actual production has been less than this level by a considerable margin over the entire period of planning. It is only in 2010-11 that this level was breached and the actual production of pulses rose to 18.1 million tonnes. However, it has again slid back to 17.0 million tonnes in 2011-12. **Supply of pulses has consistently lagged demand with the result that India has had to import a large quantity of pulses over the years.** In fact, imports have averaged almost 3 million tonnes a year during the recent period, making India the biggest importer of pulses in the world.

As far as the non-foodgrains group is concerned, the production of oilseeds rose considerably in the latter half of the 1980s, in certain years of 1990s and the first decade of the present century. For instance, oilseeds production

Table 1: Trends in Agricultural Production 1950-51 to 2011-12

(in million units)

Crop	1950-51 F.Y.P. (1951-56) (Average)	First F.Y.P. (1956-61) (Average)	Second F.Y.P. (1961-66) (Average)	Third Plans (1966-69) (Average)	Annual F.Y.P. (1969-74) (Average)	Fourth F.Y.P. (1974-79) (Average)	Fifth F.Y.P. (1980-85) (Average)	Sixth F.Y.P. (1985-90) (Average)	Seventh F.Y.P. (1992-97) (Average)	Eighth F.Y.P (1997-2002) (Average)	Ninth F.Y.P (2002-07) (Average)	Tenth	2010 -11	2011-12*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Rice	20.6	25.0	30.3	35.1	35.9	41.8	47.3	54.5	65.1	78.7	87.3	85.6	95.3	103.4
Wheat	6.4	7.9	9.7	11.1	15.5	25.4	29.8	41.2	48.3	62.9	71.3	70.2	85.9	90.2
Jowar	5.5	7.5	8.7	8.8	9.7	8.3	10.8	11.3	10.9	10.7	7.9	7.2	6.7	6.0
Bajra	2.6	3.4	3.4	3.9	4.5	6.0	5.0	6.0	5.2	6.7	7.1	8.2	10.1	10.2
Maize	1.7	2.7	3.6	4.6	5.6	6.1	6.3	7.3	7.6	9.8	11.6	14.0	21.3	21.3
Other Cereals	6.1	6.6	6.5	6.3	6.2	6.4	7.1	6.0	5.4	4.9	4.5	3.6	4.2	4.4
Pulses	8.4	10.1	11.7	11.1	10.3	10.9	11.7	11.8	12.5	13.3	13.1	13.3	18.1	17.0
Total Foodgrains	50.8	63.2	74.0	81.0	87.8	103.0	118.1	138.1	155.0	189.0	202.9	202.2	241.6	252.6
Oilseeds	6.2	5.5	6.7	7.3	7.2	8.3	8.9	11.4	13.9	21.9	21.2	23.2	31.1	30.1
Sugarcane	57.1	55.3	80.3	109.2	104.3	128.1	153.3	174.9	196.4	258.4	292.4	277.0	339.2	351.2
Cotton	3.0	3.9	4.8	5.4	5.5	5.9	6.8	7.5	8.4	12.2	10.8	16.0	33.4	35.2
Jute	3.3	3.9	4.4	5.7	4.9	5.5	5.2	6.4	8.9	8.1	9.6	10.1	10.0	10.9

* According to the Third Advance Estimates of Ministry of Agriculture released on April 23, 2012.

Note: 1. Data in the table are in terms of million tonnes excepting for cotton and jute. For cotton, data are in terms of million bales where one bale = 170 kilograms. For jute, data are in terms of million bales where one bale = 180 kilograms.

2. Data for oilseeds include five major oilseeds, *viz.*, groundnut, rapeseed and mustard, sesamum, linseed and castorseed for columns (2) to (8) and nigerseed, safflower, sunflower and soyabean also for columns (9) to (15).

Source: *(i)* For Cols. (2) to (8) *Sixth Five Year Plan* 1980-85, Annexure 9.2, p. 140, *(ii)* For column (9) Government of India, *Economic Survey, 1988-89,* Statement 1.10, p. S-15, *(iii)* For column (10) *Economic Survey, 1992-93,* Statement 1.12, p. S-16, *(iv)* For column (11) *Economic Survey, 1998-99,* Statement 1.12, p. S-16; *(iv)* For columns (12) and (13), *Economic Survey, 2007-08,* Appendix Table 1.12, p.A-17, *(v)* For column (14) *Economic Survey 2011-12,* Appendix Table 1.12, p. A-17; and *(vi)* For column (15); Government of India, Ministry of Agriculture, Directorate of Economics and Statistics.

increased from 12.7 million tonnes in 1987-88 to 18.6 million tonnes in 1990-91 and further to a level of 24.7 million tonnes in 1998-99, However, it fell thereafter and stood at only 14.8 million tonnes in 2002-03 but rose subsequently. It was 24.9 million tonnes in 2009-10 and touched the record level of 31.3 million tonnes in 2010-11. However, just like pulses, **there is a large gap between demand and supply forcing the country to import large quantities of edible oils.** For instance, the demand for edible oils was placed at 15.5 million tonnes in 2011-12 and as much 60 per cent of this demand (about 9.2 million tonnes) had to be met by imports. This pushed up the edible oils import bill to about ₹ 35,000 crore. Such dependence on imports for an essential item of mass consumption — especially one that can be produced locally — is untenable. "Indeed, it is ironic, because unlike pulses, where the lack of improved production technology makes heavier imports necessary, oilseeds have seen technological breakthrough capable of lifting both production and productivity."

Production of cotton which averaged 12.2 million tonnes per annum in the Eighth Plan and 10.1 million tonnes per annum in the Ninth Plan rose significantly in later years due to the widespread adoption of Bt cotton in 2002. From an average annual production of 16.0 million tonnes in the Tenth Plan period, the production rose to 33.4 million tonnes in 2010-11 (i.e., more than double) and is expected to increase further to 35.2 million tonnes in 2011-12. **Now almost 90 per cent of cotton area is covered under Bt cotton.** However, some experts on GMOs (genetically modified organisms) have advocated the banning of Bt cotton as it can cause skin allergies in individuals and can also prove fatal to animals. Moreover, Bt cotton hybrids can cause drastic depletion of soil nutrients.

In the non-foodgrains group, jute has shown a slow and halting progress during the entire period of planning (See Table 1). As far as sugarcane production is concerned, it registered a more or less steady growth during the four decades period 1952-53 to 2002-03, but fell sharply in 2003-04 and 2004-05. In 2006-07, sugarcane production attained a record level of 355.5 million tonnes but declined in subsequent years. In 2009-10, it was only 292.2 million tonnes but rose to 339.2 million tonnes in 2010-11. It is expected to increase further to 351.2 million tonnes in 2011-12.

Table 2 gives increases in yield per hectare. This table shows that over the period 1950-51 to 2010-11, ***yield per hectare of all foodgrains has increased by three-and-a-half times from 552 kgs per hectare in 1950-51 to 1,921 kgs per hectare in 2010-11.*** If we focus on the entire period of planning, the most significant increase has been recorded by wheat with its yield increasing from 655 kgs per hectare in 1950-51 to as high as 2,938 kgs per hectare in 2010-11. Productivity of rice has also increased significantly in recent decades (from 1,123 kgs per hectare in 1970-71, the productivity of rice rose to 2,240 kgs per hectare in 2010-11). Jowar and bajra recorded much slower rates of growth in productivity. Most disappointing has been the performance of pulses. In fact, productivity of pulses in 2000-01, was at the same level as 1960-61 (i.e., even after four decades). However, the productivity rose somewhat to 689 kgs per hectare in 2010-11.

As noted earlier, ***due to the adoption of hybrid maize varieties and Bt cotton in recent years, the productivity of maize and cotton has increased substantially.*** As is clear from Table 19.2, the productivity of maize rose from 1,822 kgs per hectare in 2000-01 to 2,507 kgs per hectare in 2010-11. Over the same period, the productivity of cotton rose from 190 kgs per hectare to as high as 510 kgs per hectare. If we consider the entire period of planning, we find that ***the average yield per hectare of pulses has grown by less than one per cent annually, on an average, since the 1950s.*** This has naturally been outstripped by population growth. As a result, the country has been forced to import large quantities of pulses over the years to meet the increasing domestic demand requirements. The productivity of oilseeds rose from 481 kgs per hectare in 1950-51 to 810 kgs per hectare in 2000-01 and 1,159 kgs per hectare in 2010-11.

1.4.2 LOW LEVELS OF PRODUCTIVITY

As is clear from Table 2, there has been a slow and steady rise in productivity during 1950-51 to 2010-11, for most of the crops. However, as compared with other countries and as compared with the potential, actual productivity levels in agriculture continue to be very low as would be clear from the discussion below.

Agricultural Productivity in Comparison with Other Countries

A comparison of productivity levels in Indian agriculture with the levels in other countries shows how low the productivity in Indian agriculture is. Table 3 compares the productivity of some crops in India with their productivity in some other countries. As is clear from this table, productivity of wheat in India is about 37 per cent of the productivity in UK and 61 per cent of the productivity in China. As far as rice is concerned, productivity in India is 48 per cent (i.e., less than half) of the productivity in China and 40 per cent of the productivity in USA. The productivity of maize in India is 38 per cent of the productivity in China and about one-fifth as compared with USA and France. As far as sugarcane is concerned, productivity in India is 53 per cent of the productivity in Egypt. Similar conclusions hold for most of the other crops not included in the table.

Information on India's global rank in major agricultural crops is still more revealing. ***India happens to be one of the largest growers and producers of most of the agricultural crops but ranks very low in terms of yield***. For instance, it has the largest area under rice (paddy) and wheat in the world and is the second largest producer of these crops. However, in terms of productivity, its rank is only 52th in the world in rice and 38th in wheat. It has the largest area under pulses in the world and is also the world's largest producer of pulses, but in terms of productivity its rank is a lowly 138th in the world.

Table 2: Yield Per Hectare of Major Crops

(kgs per hectare)

Crop	1950-51	1960-61	1970-71	1980-81	1990-91	2000-01	2010-11
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rice	668	1,013	1,123	1,336	1,740	1,901	2,240
Wheat	655	851	1,307	1,630	2,281	2,708	2,938
Jowar	353	533	466	660	814	764	956
Bajra	288	286	622	458	658	688	1,069
Maize	547	926	1,279	1,159	1,518	1,822	2,507
Pulses	441	539	524	473	578	544	689
Total Foodgrains	552	710	872	1,023	1,380	1,626	1,921
Oilseeds*	481	507	579	532	771	810	1,159
Cotton	88	125	106	152	225	190	510
Jute	1,043	1,049	1,186	1,245	1,833	2,026	2,344

* Includes groundnuts, rapeseed and mustard, sesamum, linseed and castorseed for columns (2) to (4) and four other oilseeds for columns (5) to (8) also as in the case of Table 19.1.

Source: (*i*) *Economic Survey, 1980-81*, (Delhi, 1981). Statement 17, p.77; *(ii) Economic Survey, 2007-08* (Delhi, 2008), Appendix Table 1.14, p. A-19, and *(iii) Economic Survey, 2011-12* (Delhi, 2012), Appendix Table 1.14, p. A-19.

Table 3: Productivity of Land in Some Countries, 2009

(kgs/hectare)

Rice/Paddy		Wheat		Maize	
Egypt	10,000	China	4,739	USA	10,339
India	**3,195**	France	7,447	France	9,101
Japan	6,522	**India**	**2,907**	**India**	**2,002**
Myanmar	4,085	Iran	2,029	Argentina	5,614
China	6,582	Pakistan	2,657	Philippines	2,621
Thailand	2,870	UK	7,927	China	5,259
USA	7,941	Egypt	6,448		
World	**4,329**	**World**	**3,039**	**World**	**5,162**
Groundnut (in shell)		**Sugarcane**			
China	3,357	Argentina	84,366		
USA	3,824	Brazil	78,854		
Vietnam	2,107	China	68,079		
India	**1,007**	**India**	**64,486**		
Brazil	2,638	Mexico	69,651		
Japan	2,579	Guatemala	86,166		
		Egypt	1,21,429		
World	**1,522**	**World**	**69,866**		

Source: Government of India, *Agricultural Statistics at a Glance*, 2011, (New Delhi, 2011), Table 7.2, pp. 208-10.

Potential and Actual Productivity

Not only is productivity in Indian agriculture lower than that in other countries, it is much lower than the potential. This would be clear from Table 4.

Table 4: Potential and Actual Productivity

(kgs per hectare)

Crop	Potential	Actual (2010-11)
Rice	4,000/5,810	2,240
Wheat	6,000/6,800	2,938
Jowar	3,000/4,200	956
Maize	6,000/8,000	2,507
Cotton	700/850	510
Jute	2,500/3,000	2,344
Sugarcane	96,000/11,2000	69,000

Source: (*i*) S. Gangadharan, "Agriculture: New Thrust on Dry-land Farming Needed", *The Economic Times*, January 2, 1992, p. 13, and (*ii*) Government of India, *Economic Survey,* 2011-12 (Delhi, 2012), Appendix Table 1.14, p. A-19.

Even in the case of wheat (the success crop of Green Revolution), the actual productivity in 2010-11, was only 2,938 kgs per hectare as against the potential of 6,000/6,800 kgs per hectare. In the case of rice, the actual productivity in 2010-11, was only 2,240 kgs per hectare as against the potential of 4,000/5,810 kgs per hectare. The same story holds for all other crops.

There has been a slow and steady rise in productivity during 1950-51 to 2010-11, for most of the crops. However, as compared with other countries and as compared with the potential, actual productivity levels in agriculture continue to be very low as would be clear from the discussion below:

Agricultural Productivity in Comparison with Other Countries

Potential and Actual Productivity

1.4.3 CAUSES OF LOW PRODUCTIVITY

The causes of low productivity in Indian agriculture can be divided into the following three categories: (i) general, (ii) institutional and (iii) technical.

General Causes

1. Discouraging social environment.
2. Pressure of population on land.
3. Poor quality of soil land degradation.

Institutional Causes

1. Inequitable land tenure system.
2. Lack of credit and marketing facilities.
3. Uneconomic holdings.

Technical Causes

1. Outmoded agricultural techniques
2. Use low quality of inputs
3. Inadequate irrigation facilities

General Causes

1. Social environment. The social environment of villages is often stated to be an obstacle in agricultural development. It is said that the Indian farmer is illiterate, superstitious, conservative, and unresponsive to new agricultural techniques. On the face of it, this seems to be correct. However, the fact is that given the limitation of present production relations, the unassuming and ignorant looking farmer uses his resources efficiently. On the basis of a study of Senapur Village, W. David Hopper concludes that within his limitations the Indian farmer uses his resources efficiently. G.S. Sahota also concludes that it is inappropriate to regard Indian farmer as superstitious, inefficient and irrational or to say that marginal productivity of labour is zero in agriculture.

2. Pressure of population on land. There is heavy pressure of population on land. In fact, since the non-agricultural sectors of the economy have not been able to expand at a sufficiently rapid pace over the period of last five-and-a-half decades, this pressure has continuously increased. In 2001, about 228 million workers, or nearly three-quarters of the rural working population (which was 310.7 million) was employed in the agricultural sector. Increasing pressure of population on land is partly responsible for the subdivision and fragmentation of holdings. Productivity on small uneconomic holdings is low.

3. Land degradation. Government of India has recently estimated that nearly half of the country's 329 million hectares of soil could be categorised as degraded. Almost 43 per cent of the land suffers from high degradation resulting in 33-67 per cent yield loss while 5 per cent is so damaged that it has become unusable. In a study published in 1995, C. Brandon and K. Hommann estimated that agricultural output loss due to soil degradation in India amounted to about $1.9 billion a year. Another study conducted in 1992 (by H.E. Dregne and N.T. Chou) had found that human induced water erosion led to irreversible soil productivity losses of 20 per cent or more in some parts of India. A glance at Box 19.1 reveals that soil degradation is a major factor accounting for low agricultural productivity in many regions of the country.

Institutional Causes

1. Land tenure system. Perhaps the most important reason of low agricultural productivity has been the zamindari system. Highly exploitative in character, this system drained out the very capacity, willingness and enthusiasm of the cultivators to increase production and productivity. Legislations passed for abolition of intermediaries in the post-Independence period did not break the stranglehold of the zamindars on the rural economy. They only changed their garb and became large landowners. Exploitative practices continued. Regulation of rent, security of tenure, ownership rights for tenants, etc., did not make the position of tenants better. Tenancy of most of the tenants continues to be insecure and they have to pay exorbitant rates of rent. In this land tenure system, it is difficult to increase productivity only through technological means. In fact, land reforms should precede technological changes. If investment in agriculture has to be increased it is necessary to eliminate the rentier class of zamindars and usurious class of moneylenders.

Box 19.1

Region-Specific Factors Causing Low Productivity

Agro-climatic Region	*States/Parts of States*	*Region-Specific Constraints*
Western Himalayan Region-I	J&K., HP, Uttarakhand	Severe soil erosion, degradation due to heavy rainfall/ floods and deforestation, low seed replacement rates, poor roads, poor input delivery, inadequate communication infrastructure and marketing.
Eastern Himalayan Region-II	Assam, NE States, Sikkim	Aluminium toxicity and soil acidity, soil erosion and floods, shifting cultivation, low seed replacement rates, non-availability of electricity, poor roads, poor input delivery system and communication infrastrucutre.
Lower and Middle Gangetic Plain Regions-III and IV	West Bengal, Bihar, Eastern UP	Flood/waterlogging, improper drainage, salinity/ alkalinity, arsenic contamination, low seed replacement rates, non-availability of electricity, high population growth, poor road and communication infrastructure.
Upper and Trans/Gangetic Plains Regions – V and VI	Western UP, Punjab, Haryana	Groundwater depletion, decreasing total factor productivity, micronutrient deficiency, non-availability of electricity and high population density.
Eastern Plateau and Hill Region – VII	Orissa, Jharkhand, Chhattisgarh	Moisture stress, drought, and soil acidity, iron toxicity, low seed replacement rates, non-availability of electricity, high population growth, poor roads, poor input delivery and communication infrastructure.

Source: Government of India, Planning Commission, Eleventh Five Year Plan 2007-12 (New Delhi, 2008), Volume III, Table 1.6, p. 9.

2. Lack of credit and marketing facilities. It is often assumed that the decisions of Indian farmers are not affected or modified in response to price incentives. In other words, the Indian farmer continues to produce the same agricultural output even on more attractive prices. However, the facts are different. The studies of Raj Krishna, Hopper and Stern clearly point out that the Indian farmer reacts rationally to his economic environment. Frequently on account of lack of marketing facilities or non-availability of loan on fair rate of interest, the cultivators are not able to invest the requisite resources in agriculture. This keeps the level of productivity on land and per cultivator low. If the government can revitalize the credit cooperative societies and the regional rural banks to grant more credit to the small farmers, the level of productivity can undoubtedly increase.

3. Uneconomic holdings. According to the National Sample Survey, 52 per cent holdings in 1961-62 had a size of less than 2 hectares. In 2005-06, 83 per cent of total holdings fell under this category. Most of these holdings are not only extremely small they are also fragmented into a number of tiny plots so that cultivation on them can be carried out only by labour intensive techniques. This results in low productivity. Until the excessive labour employed on agriculture is transferred to alternative jobs and the holdings are consolidated (or cooperative farming initiated) modern techniques of agriculture cannot be adopted and the possibilities of increasing agricultural productivity will remain limited.

Technical Causes

1. Outmoded agricultural techniques. Most of the Indian farmers continue to use outmoded agricultural techniques. Wooden ploughs and bullocks are still used by a majority of farmers. Use of fertilisers and new high-yielding varieties of seeds is also extremely limited. In summary, Indian agriculture is traditional, therefore, productivity is low.

2. Inadequate irrigation facilities. Gross cropped area in India in 2007-08, was 195.83 million hectares of which 87.26 million hectares had irrigation facilities. Thus, 44.6 per cent of gross cropped area had irrigation facilities in 2007-08. This shows that ***even now more than 55 per cent of the gross cropped area continues to depend on rains.***

Rainfall is often insufficient, uncertain and irregular. Accordingly, productivity is bound to be low in all those areas which lack irrigation facilities, and are totally dependent on rains. Even in areas having irrigation facilities, potential is not wholly utilised because of defective management. The costs of irrigation are also increasing continuously and the small farmer is, therefore, unable to make use of available irrigation facilities.

1.4.4 MEASURES TO INCREASE PRODUCTIVITY AND ECONOMIC EFFICIENCY IN AGRICULTURE INDUSTRY

The causes given above also suggest the measures to increase productivity. As would be clear, such measures would have to attack the problem from technical, institutional, social and economic angles. In particular, attempts will have to be made in the following directions.

1. Implementation of land reforms
2. Integrated management of land and water resources
3. Improved seeds
4. Fertilizers
5. Irrigation
6. Consumption of power
7. Cropping intensity
8. Technology
9. Plant protection. Around 10-30 per cent of the farm production in India is lost every year due to pests, weeds and diseases
10. Provision of credit and marketing facilities
11. Incentives to the producer
12. Better management
13. Agricultural research.

1. Implementation of land reforms. Though land reforms have been introduced in India in the post-Independence period with a view to eliminating the intermediary interests in land (especially zamindari), providing security of tenure and ownership rights to tenants, and reorganising agriculture through land ceiling legislation, cooperative movement and consolidation of holdings, the progress registered is too unsatisfactory. Therefore, special attempts will have to be made by the State governments to implement the land reforms legislation forcefully so that the slogan 'land to the tiller' is translated into practice. Unless this is done, the tiller will have no incentive to invest in land and adopt new agricultural techniques. Therefore, land reforms are the first and foremost necessity.

2. Integrated management of land and water resources. As stated earlier, almost half of the country's 329 million hectares of soil is degraded. There is huge loss due to waterlogging, salinisation, human-induced water erosion, etc. This proves the urgency of an integrated and efficient management of our land and water resources. With this end in view, the Committee on 25 Years Perspective Plan for the Development of Rainfed Areas constituted by the Planning Commission for the Tenth Plan has suggested treating/development of 75 million hectares arable land and non-arable land by the end of the Thirteenth Plan with a total cost of ₹ 20,850 crore. The Working Group on Watershed Development, Rainfed Farming and Natural Resources Management for the Tenth Plan has suggested treating 88.5 million hectares of rainfed/degraded land by the end of the Thirteenth Plan with a total ₹ 72,750 crore.

3. Improved seeds. Improved seeds can play an important role in increasing productivity. This has been amply proved by the experience of many countries and by the demonstration of high-yielding varieties of wheat in Punjab, Haryana and Uttar Pradesh in our own country. Therefore, more and more farmers in more and more areas should be encouraged to use improved seeds. After examining the soil conditions and availability of irrigation facilities in different areas, farmers should be advised about what seeds are best in the area. They should also be educated in the methods of sowing, manuring and irrigating the new high-yielding varieties of seeds.

4. Fertilisers. Improved varieties of seeds require heavy doses of fertilisers. It has been estimated by agricultural scientists that Indian farmers use only one-tenth the amount of manure that is necessary to maintain the productivity of soil. There are wide inter-State differences in fertiliser use as well. While it was as high as 237.1 kgs per hectare in Punjab in 2009-10, it was just 48.3 kgs per hectare in Rajasthan. Similarly, fertiliser use was only 81.4 kg. per hectare in Madhya Pradesh and 57.6 kgs in Orissa. As noted by Ramesh Chand, S.S. Raju and L.M. Pandey, increasing fertiliser use is a significant option for raising agricultural output in most of the States (elasticity of output with respect to fertiliser use is estimated to vary between 0.134 and 0.700 in various States).

5. Irrigation. The coverage of irrigation in various States varies from 14 to 97 per cent. There is a large gap between the current level and the ultimate irrigation potential except in the case of Punjab, Haryana and Rajasthan which have already exceeded the potential irrigation level. According to Ramesh Chand, S.S. Raju and L.M. Pandey, "Bihar has water resources to extend irrigation to entire gross cropped area, with a further scope to provide irrigation to expansion in gross cropped area through an increased cropping intensity. Similarly, Uttar Pradesh has the potential to raise the level of irrigation to 95 per cent from the present level of 68.4 per cent. In Orissa and Assam, irrigation can be extended to more than two-thirds of cropped area, whereas at present this facility is available to less than 27 per cent area." Elasticity of crop output with respect to irrigation is estimated to vary between 0.303 and 1.004 in various States.

6. Consumption of power. Consumption of electric power per hectare was just 9 kwh in Assam, 30 kwh in Orissa and only 34 kwh in Himachal Pradesh during 2001-02 and 2003-04. Electric power used in agriculture varied between 80 and 300 kwh in Kerala, Jammu and Kashmir, Bihar, Madhya Pradesh, West Bengal, Uttar Pradesh and Rajasthan, whereas it exceeded 1,000 kwh in Andhra Pradesh, Gujarat, Haryana, Punjab and Tamil Nadu. As noted by Ramesh Chand, S.S. Raju and L.M. Pandey, increase in electric supply to agriculture is important for promoting irrigation and thus, raising output.

7. Cropping intensity. Although irrigation facilities have expanded in recent decades, the level of crop intensity continues to be very low in most of the States. In Andhra Pradesh, Karnataka, Tamil Nadu, Madhya Pradesh, Maharashtra, Gujarat and Rajasthan more than one crop is taken on less than 30 per cent of area under cultivation. This shows that there is considerable scope to raise output through an expansion of area under double cropping.

8. Technology. Improved technology is most important for the growth of agricultural output. Available evidence shows that there is a big gap between the level of yield with improved farm practices on farmers' fields and the yield with practices followed by the farmers. Therefore, there is a need to transfer improved technology to farmers. For this purpose, extension services need to be strengthened.

9. Plant protection. Around 10-30 per cent of the farm production in India is lost every year due to pests, weeds and diseases. The Crop Care Foundation of India (CCFI) has placed the loss in agricultural production due to damage from weeds and plant diseases at almost ₹ 1.5 lakh crore each year. Most of the farmers in the countryside are unaware of the medicines and insecticides developed in recent years to face this challenge posed by diseases and insects. Some farmers have started using them to some extent but their efforts cannot be successful unless and until their neighbouring farmers also adopt them. Therefore, it is necessary to manage this programme at the government level. The government should maintain its own technical staff to carry out the spraying of pesticides and insecticides at nominal rates.

10. Provision of credit and marketing facilities. Use of improved varieties of seeds, fertilisers, pesticides, insecticides, agricultural machinery and irrigation facilities all require substantial money resources which small farmers do not usually possess. Therefore, it is necessary to strengthen the credit cooperative sector and free it from the clutches of large landowners so that it can meet the credit requirements of small farmers. The commercial banks should be encouraged to lend more to small farmers. Regional rural banks can play a special role in this regard. The marketing structure also needs a reorientation to serve the small and marginal farmers in a better way. Cooperative marketing societies should be promoted to ensure better prices to small farmers.

11. Incentives to the producer. Incentives to the agriculturists can go a long way in encouraging them to increase productivity. Incentives can be in the following forms: (a) implementing land reforms rigorously and vigorously, (b) ensuring timely availability of agricultural inputs, (c) guaranteeing remunerative prices of produce to the farmer, (d) implementing crop insurance scheme to cover the risk of damage to crops and other risks in agriculture, and (e) social recognition and conferment of awards, merit certificates, etc.

12. Better management. Just as industry needs skilled management for increased productivity, agriculture also requires better management for raising the level of productivity. For this purpose farmers have to be educated in more efficient use of their resources particularly land, irrigation facilities and agricultural implements. A related problem is the extension of science and technology in agriculture. This can be accomplished only if there is a vast network of managerial staff engaged in disseminating information about new agricultural techniques and methods of production. Other tasks of this extension staff could be to test the suitability of soil and climatic conditions for different crops and advising the farmers accordingly, ensuring proper warehousing and marketing facilities, arranging for timely supply of agricultural inputs, and advising farmers on day to day problems confronted by them in carrying out agricultural activities.

13. Agricultural research. Agricultural research is presently being conducted by the Indian Council of Agricultural Research, various Agricultural Universities and other institutions for evolving high-yielding varieties of seeds for different crops. Considerable success has been achieved in the case of wheat. However, intensive efforts are required for achieving similar success in other crops. Research should also be conducted on a substantial scale at different regional centres for testing the quality of soil, suggestings measures for soil conservation and reclamation, examining the diseases affecting different crops, improving the quality of agricultural implements, avoiding wastage in agriculture especially damage to crops resulting from pests, insects, rodents, etc.

1.4.5 SUMMARY

This Chapter examines the trends in agricultural production and productivity in India in different plan periods. Then it explains the root causes of low productivity of agriculture in India and suggests the policy measures to increase productivity and economic efficiency in agriculture. Such measures would help increase agricultural productivity from technical institutional and general economic viewpoints.

1.4.6 SELF ASSESSMENT QUESTIONS

1. Briefly examine the trends in agricultural production since Independence.
2. Examine the role of growth in the area under cultivation in increasing agricultural production in India since Independence
3. Explain the root causes of low productivity of agriculture in India
4. Enumerate the policy measures undertaken by the government to increase productivity and economic efficiency in agriculture.

LET US SUM UP

This maiden unit spells out the land utilization pattern and cropping pattern of our country by taking into account the physical conditions, geographical location, population size and growth, level of development, economic and institutional framework taken together. After a critical analysis it reveals that the land utilization pattern has undergone some changes during the past sixtyfive years. While the proportion of net sown area has increased, the proportion of uncultivated and wasteland has declined. Major crops such as rice and wheat occupy substantial share in total area under cultivation and their share is increasing. Then, the unit describes the three land tenure systems, *viz*., Zamindari system, Ryotwari, system and Mahalwari system that prevailed during Brtish rule in India for collection of land revenues. But the overall system of collection of revenue under such systems was based on exploitation. The British government snatched away surplus above the minimum subsistence the cultivator produced. The latter were forced to lead a wretched life of the deprivation. Then the unit examines the effectiveness of land reforms measures introduced in the post-Independence period in India to stop such exploitation of the actual tillers of the soil and pass on the ownership of the land to them. It emphasizes that a sound land reform policy can contribute significantly to agriculture and rural development, and therefore, deserves high priority. The unit explains that inspite of implementation of land reforms since mid of 1950s, there has been a slow and steady rise in productivity during 1950-51 to 2010-11, for most of the crops. However, as compared, with other countries and as compared with the potential, actual productivity levels in agriculture continue to be very low as would be clear from the discussion above. The unit concludes with some policy suggestions.

Key Terms

- **Farmer Producer Organizations (FPOs):** FPOs are formed by farmers to collectively undertake activities such as input procurement, production, grading, packaging, and marketing of agricultural produce. These organizations help small and marginal farmers to improve their bargaining power and access better markets.
- **Agriculture Market Infrastructure**: The infrastructure for agricultural marketing in India includes market yards, warehouses, cold storage facilities, transportation networks, and rural haats (local markets). Infrastructure development is crucial for reducing post-harvest losses and ensuring the efficient movement of agricultural commodities.
- **Market Information:** Access to timely and accurate market information is essential for farmers to make informed decisions about when, where, and how to sell their produce. Several initiatives, such as the Agriculture Produce Market Information Network (APMIN) and e-NAM (National Agriculture Market), have been launched to improve market transparency and efficiency.
- **Price Support Mechanisms**: The government implements various price support mechanisms such as Minimum Support Prices (MSPs) to provide a safety net to farmers and ensure remunerative prices for their produce. However, the effectiveness of these mechanisms varies across different crops and regions.

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UNIT-5

2.1 Chapter

AGRICULTURAL FINANCE IN INDIA

Objectives

After completing this chapter, you will be able:

- To identify the reasons for initiating land reforms
- To know about the land reform measures undertaken after independence
- To examine the effectiveness of land reforms in changing the agrarian structure
- To discuss the reasons for success and failure of various land reforms
- To contemplate the perspective of land reforms in the wake of economic liberalization

Structure:

2.1.0 INTRODUCTION

Agricultural finance plays an important role in improving agricultural production and productivity and meeting the multifarious credit requirements of farmers. To mitigate the distress of farmers and make them free from the clutches of traditional greedy-village moneylenders who charges exorbitant rate of interest for providing agriculture credit, govt. has made provisions for easy flow of agricultural credit from different institutional sources such as commercial banks, cooperative credit societies, Regional Rural Banks, NABARD, etc. This has ultimately led to bringing down the rate of interest on farm loans. Important achievements in recent yeas are delineated below:

2.1.1 NEED FOR AGRICULTURAL FINANCE

Credit needs of the farmers can be examined from two different angles - (i) on the basis of time, and (ii) on the basis of purpose.

On the basis of time: Agricultural credit needs of the farmers can be classified into three categories on the basis of time — (i) short-term, (ii) medium-term, and (iii) long-term. Short-term loans are required for the purchase of seeds, fertilisers, pesticides, feeds and fodder of livestock, marketing of agricultural produce, payment of wages of hired labour, litigation, and a variety of consumption and unproductive purposes. The period of such loans is less than 15 months. Main agencies for granting of short-term loans are the moneylenders and cooperative societies. Medium-term loans are generally obtained for the purchase of cattle, small agricultural implements, repair and construction of wells, etc. The period of such loans extends from 15 months to 5 years. These loans are generally provided by moneylenders, relatives of farmers, cooperative societies and commercial banks. Long-term loans are required for effecting permanent improvements on land, digging tubewells, purchase of larger agricultural implements and machinery like tractors, harvesters, etc., and repayment of old debts. The period of such loans extends beyond 5 years. Such loans are normally taken from Primary Cooperative Agricultural and Rural Development Banks (PCARDBs).

On the basis of purpose: Agricultural credit needs of the farmers can be classified on the basis of purpose into the following categories — (i) productive, (ii) consumption and (iii) unproductive. Under productive needs, we can include all credit requirements which directly affect agricultural productivity. Farmers need loans for the purchase of seeds, fertilisers, manures, agricultural implements, livestock, digging and repair of wells and tubewells, payment of wages, effecting permanent improvements on land, marketing of agricultural produce, etc. Repayment of these loans is generally not difficult because the very process of production generally creates the wherewithals for repayment. Farmers often require loans for consumption as well. Between the moment of marketing of agricultural produce and harvesting of the next crop there is a long interval of time and most of the farmers do not have sufficient income to sustain them through this period. Therefore, they have to take loans for meeting their consumption needs. In the time of droughts or floods, the crop is considerably damaged and farmers who otherwise avoid taking loans for consumption, have also to incur such loans. Institutional credit agencies do not provide loans for consumption purposes. Accordingly, farmers are forced to fall back upon moneylenders and mahajans to meet such requirements. In addition to consumption, farmers also require loans for a multiplicity of other unproductive purposes such as litigation, performance of marriages, social ceremonies on the birth or death of a family member, religious functions, festivals, etc. Since institutional agencies do not grant credit for such unproductive purposes, farmers have to seek assistance from moneylenders and mahajans. It is often very difficult to repay such loans because they do not contribute to the productivity of the farmers.

2.1.2 SOURCES OF AGRICULTURAL FINANCE AND THEIR RELATIVE IMPORTANCE

Non-institutional and Institutional Sources

Sources of agricultural finance can be divided into two categories: (1) non-institutional sources, and (2) institutional sources. The non-institutional sources are the following — (*i*) moneylenders, (*ii*) relatives, (*iii*) traders, (*iv*) commission agents, and (*v*) landlords. The institutional sources comprise the cooperatives, Scheduled Commercial Banks and Regional Rural Banks (RRBs). As far as cooperatives are concerned, the Primary Agricultural Credit Societies (PACSs) provide mainly short and medium-term loans and PCARDBs long-term loans to agriculture. The commercial banks, including RRBs, provide both short and medium-term loans for agriculture and allied activities. The National Bank for Agriculture and Rural Development (NABARD) is the apex institution at the national level for agricultural credit and provides refinance assistance to the agencies mentioned above. The Reserve Bank of India as the central

bank of the country plays a crucial role in this sphere by giving overall direction to rural credit and financial support to NABARD for its operations.

At the time of Independence, the most important source of agricultural credit was the moneylenders. In 1951 (the year when planning was initiated in the country) moneylenders accounted for as much as 71.6 per cent of rural credit. The predominant position of the moneylenders was due to the reason that there was no other source worth the name and the farmers were forced to borrow from them. This almost total dependence of the farmers on the moneylenders enabled the latter to dictate terms and exploit the former in a number of ways. For instance, moneylenders charged exorbitant rates of interest ranging from 18 per cent to 50 per cent or even more. They often manipulated accounts to their advantage by not entering the money returned and interest paid into the account. They also forced farmers to sell the agricultural produce to them at low prices. Long-term loans were often advanced against the security of land and moneylenders often manipulated things in such a way as to seize the land. On account of this reason, they can be termed 'anti-social' elements. The government has, therefore, undertaken various steps to regulate the activities of the moneylenders. For this purpose, various legislations were enacted. The basic objectives of these legislations were as follows: (1) to bring about an improvement in the terms on which private credit was made available to the agriculturists and place legal restrictions on the unreasonable exactions of the moneylenders, and (2) to enable the civil courts to do greater justice to both the lenders and the borrowers than was possible, under the ordinary Code of Civil Procedure. To the first category belong such provisions as: (*a*) licensing and/or registration of moneylenders, (*b*) fixation of maximum rates of interest, and (*c*) maintenance of accounts by moneylenders, grant of regular receipts, etc. To the second category belong such provisions as: (*a*) the empowering of the court to 'reopen' the closed transactions and go behind the written contract, (*b*) protection of certain forms of assets from attachment in execution of decrees, and (*c*) the empowering of the court to direct payment of decretal amount by instalments.

As far as institutional sources are concerned, **the first institution established and promoted was the institution of cooperative credit socieities.** The cooperative movement in this country was started as far back as 1904. However, its development was very slow. Even in 1951, cooperatives provided only 3.1 per cent of total rural credit. Hence, the dominance of moneylenders in agricultural credit continued. It was only with the nationalisation of 14 major banks in 1969 (followed by nationalisation of 6 more banks in 1980) that the grip of moneylenders on agricultural credit could be reduced. In 1975, the government set up the third institution — the institution of RRBs (Regional Rural Banks). Thus, **by the end of 1976, there emerged three separate institutions for providing rural credit, which is often described as the multi-agency approach. In 1982, NABARD was set up.** India now has a wide network of rural finance institutions (RFIs). There are more than 30,000 commercial bank branches, 14,000 regional rural banks, and about 1,00,000 rural credit Cooperatives. This translates to about 4,700 people served by each RFI outlet.

As a result of the efforts undertaken by the government to develop the institutional sources of credit, the role of non-institutional sources like moneylenders in agricultural credit declined considerably. The share of non-institutional sources in rural credit which was as high as 92.7 per cent in 1951 fell consistently to 68.3 per cent in 1971 and further to 30.6 per cent in 1991 (in 2002, it rose to 38.9 per cent). More significantly, the share of moneylenders fell from 71.6 per cent in 1951 to merely 17.5 per cent in 1991 (though it rose to 26.8 per cent in 2002). The share of institutional sources in rural credit rose correspondingly from only 7.3 per cent in 1951 to 31.7 per cent in 1971 and further to 66.3 per cent in 1991 (in 2002, it fell to 61.1 per cent).

Expansion of Institutional Credit to Agriculture

There has been massive expansion of institutional credit to agriculture over the years. This would be clear from the fact that institutional credit to agriculture rose from ₹ 744 crore in 1970-71 to ₹ 9,830 crore in 1990-91 and ₹ 62,045 crore in 2001-02 (the last year of the Ninth Plan). The Tenth Plan (2002-07) projected the total credit flow to agriculture and allied activities at ₹ 7,36,570 crore. However, in the first two years of the Plan, 2002-03 and 2003-04, the credit flow to agriculture from all formal sources was only ₹ 1,56,541 crore (₹ 69,560 crore in 2002-03 and ₹ 86,981 crore in 2003-04). To fulfil the Tenth Plan target, major initiatives were, therefore, required to increase agricultural credit. To suggest measures to increase agricultural credit, the Reserve Bank constituted an **"Advisory Committee on Flow of Credit to Agriculture and Related Activities from the Banking System"** under the chairmanship of V.S. Vyas. This Committee submitted its final report in 2004. The Committee gave 99 recommendations of which 32 were accepted and implemented by the Reserve Bank. Some of the major recommendations were: (1) A review of mandatory lending to agriculture by commercial banks to enlarge direct lending programmes; (2) Public and private sector banks to increase their direct agricultural lending to 12 per cent of net bank credit in the next two years and to 13.5 per cent two years thereafter, within the overall limit of 18 per cent of total agricultural lending; (3) Banks to increase their disbursements to small and marginal farmers under Special Agricultural Credit Plan (SACP) by the end of the Tenth Plan Period (i.e., by end-March 2007) to 40 per cent; (4) Reduction in cost of agricultural credit by enhancing the cost-effectiveness of agricultural loans; (5) Credit flow to small borrowers to be improved through reduction in cost of borrowing, revolving credit packages, procedural simplification, involvement of Panchayati Raj institutions and microfinance, etc.

In June 2004, the government announced a credit package for the agricultural sector, which envisaged doubling of agricultural credit over a period of three years. This target was achieved in a period of just two years. Target for agricultural credit for the year 2009-10 was kept at ₹ 3,25,000 crore while achievement was ₹ 3,84,514 crore (118 per cent of the target). Target for 2010-11 was kept at ₹ 3,75,000 crore while achievement at ₹ 4,46,779 crore was 119 per cent of the target. Target for agricultural credit for the year 2011-12 was raised to ₹ 4,75,000 crore which has been increased further to ₹ 5,75,000 crore in the Union Budget for 2012-13.

From kharif 2006-07 to 2008-09, farmers were receiving crop loans upto a principal amount of ₹ 3 lakh at 7 per cent interest. In the year 2009-10, Government provided an additional 1 per cent interest subvention to those farmers who repaid their short-term crop loans as per schedule. The Government revised this subvention for timely repayment of crop loans from 1 per cent to 2 per cent for the year 2010-11, bringing down the effective rate of interest for such farmers to 5 per cent per annum. In the Union Budget for the year 2011-12, the Finance Minister further raised the subvention to farmers who repay their crop loans on time to 3 per cent. Thus, the effective rate of interest for such farmers was reduced to 4 per cent per annum. The 3 per cent subvention scheme to farmers who repay their crop loans on time has been retained in the Union Budget for 2012-13. Thus, the effective rate of interest in 2012-13 will remain at 4 per cent per annum.

Table 1

Institutional Credit to Agriculture: Relative Share of Different Institutions

(per cent)

Year	Cooperatives	Scheduled Commercial Banks	Regional Rural Banks	Total Credit to Agriculture
1970-71	100.0	–	–	744
1980-81	61.6	38.4	–	3,292
1990-91	49.0	47.6	3.4	9,830
2000-01	39.4	52.6	8.0	52,827

2001-02	38.0	54.1	7.9	62,045
2002-03	34.1	57.2	8.7	69,560
2003-04	31.0	60.3	8.7	86,981
2004-05	25.0	65.0	10.0	1,25,309
2005-06	22.0	69.5	8.4	1,80,485
2006-07	18.5	72.6	8.9	2,29,400
2007-08	18.9	71.1	10.0	2,54,658
2008-09	15.3	75.8	8.9	3,01,908
2009-10	16.5	74.3	9.2	3,84,514
2010-11	15.7	74.5	9.8	4,46,779

Source: (1) Rakesh Mohan, "Agriculture Credit in India", *Economic and Political Weekly,* March 18, 2006, Table 1, p. 1016; (2) Government of India, *Economic Survey,* 2011-12 (Delhi, 2012), Table 5.8, p. 111.

Change in Relative Shares of Institutions

After the nationalisation of 14 major commercial banks in 1969, the commercial banks have consistently increased their share in institutional credit to agriculture from 38.4 per cent in 1980-81 to 74.3 per cent in 2010-11. As a result, the relative share of cooperative societies has declined from 61.6 per cent in 1980-81 to 15.7 per cent in 2010-11. RRBs have contributed about 8 to 10 per cent of agricultural credit over the years (See Table 1).

2.1.3 COOPERATIVE CREDIT SOCIETIES

History of cooperative credit is very old in India. In fact, the cooperative movement was initiated in 1904, through the establishment of cooperative credit societies. These societies were organized to relieve the indebtedness of rural people and promote thrift.

Organisation of Cooperatives

The rural cooperative credit institutions in India have been organised into short and long-term structures. The short-term cooperative credit structure is based on a three-tier structure, except the States in the north-east region. At the lowest tier are the Primary Agricultural Credit Societies (PACSs). These are organised at the village level. At the second tier are the District Central Cooperative Banks (DCCBs) organised at the district level. At the third and uppermost tier are the State Cooperative Banks (StCBs) organised at the State level. As far as the village level PACSs are concerned, they can be formed by any ten or more than ten persons. These societies generally advance loans only for productive purposes. The repaying capacity of the individual is taken into account while advancing such loans. The DCCBs are of two types — cooperative banking union and mixed central cooperative banks. Membership of the former is open only to cooperative societies, while membership of the latter is open to both, individuals and Cooperative societies. The chief task of the District Central Cooperative Banks is to advance loans to the PACSs in times of need so that they can fulfil the requirements of farmers. The StCB, in turn, advances loans to the DCCBs in order to augment their capacity to provide loans to the village level PACSs. It also coordinates and regulates the working of DCCBs. It also provides the link between the Reserve Bank of India and the money market on the one hand and lower levels of cooperative structure on the other.

In addition to their short-term credit requirements, farmers also require long-term credit for: (*i*) effecting permanent improvements in land (for example, making wasteland fit for cultivation, digging of wells or tubewells, etc.); (*ii*) purchasing agricultural implements; and (*iii*) repaying old debts. To cater to these requirements, long-term credit cooperatives have been set up. These are organised at two levels. These differ from State to State and may be categorised into four types as: (*i*) the unitary structure in which State Cooperative Agricultural and Rural Development Banks (SCARDBs) operate at the State level through their branches and have direct membership of individuals; (*ii*) the federal structure in which Primary Cooperative Agricultural and Rural Development Banks (PCARDBs) operate as independent units at

the primary level and federate themselves into SCARDBs at the State level; (*iii*) the mixed structure wherein both the unitary and federal types operate in one form or another; and (*iv*) the integrated structure wherein no separate Agricultural and Rural Development Banks exist and the long-term credit business is undertaken by the long-term section of the StCBs concerned. **The rural credit cooperative structure in India is a huge institutional structure comprising 31 StCBs, 370 DCCBs and 94,647 PACSs at the grass roots level in the short-term credit structure and 20 SCARDBs and 697 PCARDBs in the long-term credit structure as at end-March 2011.**

However, the density of network of rural cooperative credit institutions shows marked regional variations. As far as the short-term cooperative credit structure is concerned, the number of villages per PACS varies from one in Kerala to 29 in Assam, with all-India average being 7. As far as the long-term cooperative credit structure is concerned, the number of villages per branch ranges from 25 in Kerala to 2,122 in Assam. At the all-India level, there are 410 villages per branch.

Cooperatives and Rural Credit

Although the cooperative movement was initiated in India as far back as in 1904, the role of cooperative credit societies in providing credit was almost negligible in the pre-Independence period. Even after half a century of operations, cooperatives provided only 3.1 per cent of total rural credit in 1951-52. However, progress after Independence has been quite rapid. For instance, the cooperatives provided 15.5 per cent and 22.7 per cent of total rural credit in 1961-62 and 1970-71 respectively. The amount of short-term and medium-term credit advanced by these societies increased from ₹ 23 crore in 1951-52 to ₹ 203 crore in 1961-62 and further to ₹ 1,425 crore in 1979-80. This shows that over a period of nineteen years (1960-61 to 1979-80) the short and medium-term loans increased by more than seven times. There was an impressive expansion in rural credit provided through cooperatives in the Sixth and Seventh Plans. By the time the Eighth Plan started (in 1992-93), the rural credit provided through cooperatives had touched the level of ₹ 6,484 crore (which was 53.4 per cent of the total direct institutional credit made available to agriculture). However, thereafter, while absolute amount of rural credit provided by cooperatives increased, their percentage share in total institutional credit declined. **In 2010-11, cooperatives accounted for 15.7 per cent of institutional credit provided to agriculture (₹ 70,105 crore out of ₹ 4,46,779 crore).**

Cooperative Credit: An Evaluation

Each and every Committee/Working Group which has reported on the rural credit system in India since the Royal Commission on Agriculture (1928) has reaffirmed that from the point of view of structural appropriateness, there is no alternative to cooperatives at the village level for provision of rural credit. The Rural Credit Survey Committee (1954) eloquently expressed this view in the oft-quoted statement, "cooperation has failed, but cooperatives must succeed". Even the All India Rural Credit Review Committee (1969) which recommended the entry of commercial banks into the rural credit system stated clearly that this was being done to 'supplement' and not 'supplant' the cooperative credit structure. In fact, there has been an extensive expansion, both in the coverage and operations, of cooperative credit societies in the post-Independence period. The performance in the issue of loans is also commendable. However, **the rural cooperative institutions are beset with many problems ranging from low resource base, high dependence on refinancing agencies, lack of diversification, huge accumulated losses, persistent NPAs (non-performing assets), low recovery levels and various other types of organisational weaknesses**. Many institutions have continued to make losses over the years. The major deficiencies in the working of the cooperative societies are as follows:

1. The essence or basic features of cooperative banking system must be a larger reliance on resources mobilised locally and a lesser and lesser dependence on higher credit institutions. However, many PACSs are at present dependent on CCBs and have failed miserably in mobilising rural savings. Heavy dependence on outside funds has, on the one

hand, made the members less vigilant, not treating these funds as their own and on the other led to greater outside interference and control. Overall, this has made the cooperatives a "mediocre, inefficient and static system".

2. The cooperative credit institutions are plagued by the problem of high level of overdues. These overdues have clogged the process of credit recycling since they have substantially reduced the capacity of cooperatives to grant loans. Overdues have also impaired the eligibility of the cooperatives for availing of refinance facilities from NABARD. Not only this, mounting overdues result in increasing the transaction cost for effecting recovery. According to Agrawal, Puhazhendhi and Satyasai, the worst implication of build-up of overdues is that a large number of farmers who are still outside the purview of institutional credit suffer on account of non-availability of credit.

3. The rural cooperative institutions have a high level of NPAs (non-performing assets). For instance, as at end-March 2010, the aggregate NPAs of StCBs were estimated at ₹ 4,353 crore which was 8.8 per cent of the total outstanding loans and advances. For DCCBs, on the same date, gross NPAs were at ₹ 16,234 crore, which was equivalent to 12.9 per cent of their outstanding loans and advances. Gross NPAs of SCARDBs and PCARDBs (as percentage of loans outstanding) were as high as 33.2 per cent and 42.0 per cent respectively in 2010. These high level of NPAs have seriously impacted the overall 'health' of the cooperative institutions and adversely affected their viability.

4. A large number of rural cooperative credit institutions have incurred substantial losses. As on March 31, 2010, two out of 31 StCBs, 47 out of 370 DCCBs, 41,679 out of 94,647 PACSs, ten out of 20 reporting SCARDBs and 276 out of 697 reporting PCARDBs incurred losses. The accumulated losses of these institutions upto end-March 2010 amounted to ₹ 10,676 crore (excluding PACSs).

5. PACS is the most important link in the short-term cooperative credit structure. However, most of them are too small in size to be economical and viable. Besides, several of them are also dormant while some are defunct. Out of 94,647 PACSs as on March 31, 2010, 3,481 were reported to be dormant and 1,665 defunct.

6. Because of their strong socio-economic position and grip over the rural economy, large landowners have cornered greater benefits from cooperatives. This is the opposite of what the planners intended. Farmers having holdings less than 2 hectares in size have received about one-third of total loans advanced by the PACSs while the share of tenants, share-croppers and landless labourers (who are the poorest and, therefore, the most needy) has hovered around only 7 per cent. The restricted access of small farmers to cooperative credit is further highlighted by the fact that only 30 per cent of the farmers holding less than 1 hectare are members of PACSs, whereas almost all the farmers holding above 4 hectares are members of PACSs.

7. There are considerable regional disparities in the distribution of credit by cooperative societies with the six States (Gujarat, Maharashtra, Karnataka, Kerala, Punjab and Tamil Nadu) accounting for 70 per cent of the short-term loans provided by the PACSs as at end-March 2010.

8. The powers which vest in the government under the cooperative law and rules are all-pervasive. Over the years, State has come to gain almost total financial and administrative control over the cooperatives, in the process stifling their growth. Instead of strengthening the base, a weak base was vastly expanded as per plan targets and an immense governmental and semi-governmental superstructure was created. The driving principle seemed to be: 'If people cannot or will not do it, the State can and will do it'. As a result, **the cooperatives have virtually become 'government-directed, government-controlled and government-regulated enterprises' giving rise to red-tapism and administrative interference by the government in the day to day working of the cooperatives**. More serious consequences of this 'politicisation' of cooperative societies are interference in recovery of cooperative dues or promise to write-off dues if elected to power, and determination of interest rates on considerations other than

financial returns, i.e., with an eye on populist appeal. As correctly pointed out by ACRC, such actions generate a general psychology of non-repayment, vitiating the recovery climate and jeopardising the financial interest of credit agencies. Besides, mass supersessions of elected bodies are resorted to on political considerations. Replacement of democratically elected managements with government officials or nominated non-officials has struck at the very heart of the cooperative system. Even where supersession has not taken place, the show is managed by invoking the powers of the government and deferring election as long as possible.

In addition to the above problems, many cooperatives suffer from poor management and lack of enthusiasm and dedication among members resulting in a great deal of inefficiency and poor service to the members. Moreover, affairs of most of the cooperative societies are managed by the large farmers to their advantage in connivance and collusion with government officials while the small and marginal farmers and other poor members generally have no say. This dampens the spirit of the latter and their faith in 'cooperation' is badly shaken. This is a serious threat to the long-run sustainability of the cooperative movement.

2.1.4 COMMERCIAL BANKS AND RURAL CREDIT

For a long period of time, the share of commercial banks in rural credit was meagre. For instance, it was only 0.9 per cent in 1951-52 and 0.7 per cent in 1961-62. The insignificant participation of commercial banks in rural credit in India is partly explained by the subsistence nature of agriculture and its unorganised, individualistic functioning. Moreover, the heavy dependence of agriculture on monsoons makes it an uncertain and risky venture. As against this, the industrial sector is relatively more organised and less dependent on natural factors. Consequently, the commercial banks tended to concentrate on the industrial sector and even diverted the funds mobilised from rural areas to meet the demand for credit of the industrial sector.

It was partly to remedy this state of affairs that 14 major commercial banks were nationalised in 1969. This was followed by the nationalisation of 6 more banks in 1980. After nationalisation, the banks opened a large number of branches in rural areas and have increased their advances to these areas considerably. In June 1969, out of the total of 8,262 branches of commercial banks in India, 1,832 (i.e., 22.2 per cent) were in rural areas. As at end June 2011, the number of total branches had shot up to 90,830. Of this, 33,795 (i.e., 37.2 per cent) were in rural areas. This shows that while the total number of branches increased by about eleven times, the total number of rural branches increased by more than eighteen times. The advances from banks to agriculture have also grown by leaps and bounds. For instance, advances to agriculture (amount outstanding) aggregated only ₹ 162 crore in June 1969. As at end-March 2011, this had risen to ₹ 4,14,973 crore accounting for 16.6 per cent of ANBC (adjusted net bank credit). In 2010-11, banks accounted for 74.5 per cent of institutional credit provided to agriculture.

The above data shows that after nationalisation, the commercial banks have played an important role in providing rural credit. This has enabled farmers to purchase agricultural inputs and adopt new agricultural technology on an increasing scale, expand activities in the non-farm sector in rural areas, and also accelerate the pace of private agricultural investment. For example, a study by Binswanger *et al.,* shows that the rapid bank expansion in India increased fertiliser demand by about 23 per cent, investment level in tractors by 13 per cent, investment in pumps by 41 per cent, milk animals by 46 per cent and in draft animals by about 38 per cent. The study also notes that a 10 per cent increase in the number of commercial bank branches increases investment in animals and pumpsets by between 4 to 8 per cent. The effect on tractors is 1.4 per cent. **Thus, bank expansion has played a pivotal role in India's agricultural growth and modernisation in addition to freeing large number of rural people from the clutches of the moneylenders.** Under the Reserve Bank's Service Area Approach to rural lending in operation since April 1989, individual bank branches are expected to serve the credit needs of 15 to 25 villages each. After carrying out surveys

and preparing village-wise economic profiles, bank branches have been preparing credit plans for the villages in their service areas. Block level bankers' committees have been constituted for coordination among credit institutions and developmental agencies and for monitoring the implementation of the credit plans. Each bank has also been preparing Special Agricultural Credit Plan (SACP), segregated into quarterly targets, which is monitored by the Reserve Bank of India.

Operations of Commercial Banks: A Critical Review

Despite the achievements of the commercial banks in the field of rural credit mentioned above, their performance and operations have invited a lot of criticisms. The main points of criticism are the following:

1. The fast increase in bank credit to rural areas after nationalisation has created strains in the system due to rapid expansion and diversification. One of the problems of such rapid expansion has been the deterioration in the quality of scheme preparation, particularly under the anti-poverty programmes. Deterioration in the quality of lending is also due to heavy workload of day to day housekeeping, without commensurate increase in the supporting staff.

2. The commercial banks have found sanctioning and monitoring of a large number of small advances in their rural branches, time-consuming and manpower intensive and consequently a high cost proposition. Partly because of this, the banks have been found reluctant in posting sufficient supervisory and other staff in rural branches. Consequently, supervision of rural advances has come to be neglected. Also, the staff in rural branches of commercial banks lacks sufficient motivation to work in rural areas for various reasons. Not only this, as pointed out by ACRC, there is a lack of adequate staff in rural branches of commercial banks.

3. Opening of a large number of branches in rural areas which do not have adequate business potential, rise in establishment expenses, and increase in non-performing advances affected the profitability of the banks adversely. While the yield on advances has been declining, the average cost of deposits and borrowings has increased, reducing the margins available to the banks.

4. The recovery position of the commercial banks is bad. In certain years, the level of overdues has been 30 per cent or even more. This is an alarming situation and calls for corrective action. As warned by the Seventh Plan, "If this trend is not reversed and banks are reduced to institutions providing grants rather than recycling scarce resources to get the maximum benefits for the country as a whole, the banking system will be unable to provide more credit to meet the growing needs of the farmers."

5. The commercial banks have failed to fill the geographical gap in the availability of credit not covered by the cooperatives. They have also tended to serve those areas which were already well served by the cooperatives, e.g., Southern and Western regions and the States of Punjab and Haryana. States with a deficient rural credit system have not benefited much. Moreover, in the absence of proper geographical spread of bank branches, it is found that more than one bank operates in the same area resulting in unhealthy competition between one commercial bank and another. The real need was to make available only one alternative source of institutional credit, whereas in reality the multi-agency system has tended to become multi-alternative credit system.

6. The credit-deposit ratio is an important indicator of the degree of involvement of banks in lending. The rural credit-deposit ratio declined from 1.58 per cent in 1991 to 0.73 per cent in 2001, which shows that deposits mobilised from rural India were being utilised elsewhere. In other words, rural India was financing the other sectors of the economy. According to Tenth Five Year Plan, this decline in the rural credit-deposit ratio has a direct bearing on the decline of public sector capital formation in the rural sector.

7. Loan disbursal to small and marginal farmers decelerated sharply in the 1990s. The option provided to the commercial banks to meet priority sector lending targets by investing in RIDF (Rural Infrastructure Development Fund) and placing deposits with SIDBI (Small Industries Development Bank of India) reduced the rate of growth of direct finance to small and marginal farmers. As a result, the annual compound growth rate of direct finance (disbursement) to farmers with less than 2.5 acres (marginal farmers) declined from 18.1 per cent in 1980s to 13.0 per cent in 1990s. The annual compound growth rate of direct finance (disbursement) to small farmers (holdings between 2.5 acres to 5.0 acres) declined from 15.1 per cent to 11.0 per cent over the same period.

8. The problem of coordination not only between one commercial bank and another but also between commercial banks and the cooperative credit structure, on the one hand, and between banks and the Government departments, on the other, has assumed serious dimensions. Though under the Lead Bank Scheme, there is a Lead Bank for each district, yet in many cases the number of branches belonging to the Lead Bank is less than the number of branches belonging to other commercial banks put together. If 50 or more branches owned by 10 to 15 banks are to be brought together to implement a common programme, it can well be imagined how difficult the task of coordination and implementation is under such a situation.

9. The commercial banks are mandated to achieve certain targets and sub-targets under priority sector lending. **Forty per cent of the adjusted net bank credit (ANBC) is thus required to be channelled to identified priority sectors such as agriculture, small-scale industry, small business, etc. Direct finance to agriculture and allied activities is to reach a level of 18 per cent of net bank credit.** While the total priority sector advances (amount outstanding), as per cent of ANBC, stood at 41.0 per cent in March 2011, advances to agriculture (amount outstanding), as per cent of ANBC, was 16.6 per cent in March 2011. **For most of the post-1991 period, the share of agriculture in ANBC has been substantially less than the target of 18 per cent.** This is the state of rural credit at a time when the banking system is supposed to have accumulated a large amount of liquidity. In fact, a bulk of this liquidity is being invested in government securities — an instance of banking sector's resources being weaned away from productive sector to support government consumption.

10. A study of the impact of banking sector reforms on agricultural credit by Gagan Bihari Sahu and D. Rajasekhar reveals certain disturbing facts as far as bank operations in the post-reform period (the period since 1991) are concerned: *(i)* Because of mounting overdues and increasing losses to rural bank branches, the banks were directed to close down their loss making branches or merge them with other banks. As a result of this policy decision, there was a marginal decline in the number of rural branches. While the average annual growth rate of rural bank branches was as high as 6.05 per cent during the decade 1981-91, it turned negative at –1.13 per cent during the period 1992- 2000 *(ii)* The share of those farmers, borrowing less than ₹ 25,000 declined in both the total number of loan accounts and total loan amount during the reform period; *(iii)* Banks provided larger quantum of funds to activities earning higher interest incomes. This trend was more prominent after the deregulation of the lending rate to ultimate borrowers; *(iv)* The better off farmers improved their access to formal credit as compared to marginal farmers; *(v)* Despite the increasing consensus to extend credit facility to agriculture in general, and small and marginal farmers in particular, banks were unable to lend to those activities with high social return or those categories of creditworthy borrowers who had bean traditionally marginalised in the credit market.

2.1.5 REGIONAL RURAL BANKS

The Working Group on Rural Banks (1975) recommended the establishment of Regional Rural Banks (RRBs) to supplement the efforts of the commercial banks and the cooperatives in extending credit to weaker sections of the rural community — small and marginal farmers, landless labourers, artisans and other rural residents of small means.

The intention in having these new banks was that there should, in the Indian context, be an institutional device which combined the local feel and familiarity with the rural problems which the cooperatives possessed and the degree of business organisation and modernised outlook which the commercial banks had, with a view to reaching the rural poor more extensively. The Working Group rightly sensed that what the rural poor needed was a low cost, low profile credit institution into which they could walk in without trepidation. The staff of RRBs was to be recruited from the neighbouring area and as such would have a better understanding of the local problems and the local people, their needs and their constraints.

Consequent upon the recommendations of the Working Group, 5 RRBs were initially set up in 1975. Their number later rose to 196. **In 2010-11, RRBs accounted for 9.8 per cent of institutional credit provided to agriculture (₹ 43,968 crore out of ₹ 4,46,779 crore).**

Problems of RRBs

1. Organisational Problems. Each RRB is sponsored by a commercial bank. The Central Government and the concerned State government also contribute to its capital. Thus there is a multi-agency control of RRBs. This has contributed to a lack of uniformity in their functioning. Besides, it has resulted in lack of support from State governments and lack of proper monitoring by sponsor banks. **Second,** inherent in the concept of RRB is the constraint of restricted area of operation and restricted clientele, i.e., specific target groups. **Third,** there has been a lack of proper systems and procedures within the institutions of RRBs, which could have avoided or minimised the scope for overdues right from the start. **Fourth,** the process of recruitment and training of RRB staff has not received adequate attention. The urban and pro-rich bias seems to prevail in the RRB staff, and this has not evoked confidence in the rural poor. **Lastly,** the organisational problems got compounded by the unplanned and unwieldy growth of these banks and branches opened under pressure from the State governments. This created numerous problems in the control and management of these banks.

2. Problems of Recovery. For a number of years, the recovery position of RRBs was very bad and their recovery varied between 51 per cent to 61 per cent. Thus, overdues varied between 39 per cent to 49 per cent. The high incidence of overdues was due to a number of internal and external factors. The internal factors included defective loaning policies, weak monitoring and supervision, apathy towards recovery, failure to link lending with development and to ensure proper end use of the loan. Among the external factors mention may be made of political interference, wilful default, droughts and floods, lack of legal and administrative support from the State government in the matter of loan recovery, etc.

3. Mounting Losses Leading to Non-viability. In his 1994-95 Budget Speech the Finance Minister pointed out that of the 196 RRBs, as many as 150 had shown losses in each of the previous five years. Many had completely wiped out their equity and reserves and in some the losses were eating into their deposits. This was indeed an unsustainable situation. A number of factors had contributed to the problem of mounting losses. Some of these were as follows: **First,** the RRBs were so structured as to confine their lending to weaker sections where the interest earned on loans is the lowest in the banking system. **Second,** low margins coupled with high cost of servicing a large number of small accounts added to the losses. **Third,** in the absence of loans which could yield higher returns, RRBs did not have any scope for cross-subsidisation. In the opinion of the ACRC, it is this absence of cross-subsidisation that introduced 'built-in non-viability' in the working of the RRBs. **Fourth,** opening of RRB branches year after year added to the overhead costs without proportionate increase in income. **Fifth,** non-availability of competent and trained staff also posed serious problems. **Lastly,** the economic environment of many RRB branches is not satisfactory.

4. Management Problems. Since the RRBs are district level small institutions, the sponsor banks have been deputing only middle-management staff to run them. Such staff finds it difficult to take independent decisions in a new environment. In addition, meetings of the board of directors of RRBs are not held regularly and a large number of non-

official directors do not show much interest in the working of the banks. Moreover, a number of problems crop up due to the multi-agency control of the RRBs and the functioning of RRBs is also not uniform in all the States/districts.

Because of what ACRC called, the 'built-in non-viability' of the RRBs, a suggestion was made that these banks should be merged with the sponsor banks. According to the Committee, such merger will not only be able to strengthen their delivery system but will also enhance their deposit raising capability. More important than this, the scope for internal cross-subsidisation would be widened and losses on account of having to serve the weaker sections could be offset by earnings from the higher interest yielding loan portfolio of sponsor banks. However, as noted by M.L. Dantwala, merger of RRBs with the sponsor banks will not solve the problem of losses. It will only "conceal" these losses as commercial banks with their wide range of lending will be able to cross-subsidise by earnings from the higher interest yielding loan portfolio. The losses on loans to weaker sections will continue to occur unless interest rates on these loans are hiked — a proposition which was not acceptable to the ACRC also. Conceding that "the transaction costs (of RRBs) are somewhat higher than those of the rural branches of the commercial banks", Dantwala argued that the important question is whether the transaction cost of the rural branches of the commercial banks would be lower than that of the RRBs' cost if they were to do the same type of business as the RRBs are doing? "Our hunch is that with their higher establishment costs, the transaction cost of the rural branches would be higher for the type of business undertaken by RRBs." The biggest apprehension expressed by Dantwala is that in the post-merger scenario, the very concept of poor man's banking would vanish.

The fact of the matter is that RRBs have an important role to play as a part of the multi-agency approach to rural credit and as an instrument of income distribution in rural areas. In the former role, as noted by the Kelkar Committee, RRBs are eminently suitable to do the job envisaged for them (i.e., taking banking closer to the rural households) and they can exist side by side with cooperatives and commercial banks. In the latter role, RRBs can keep on doing the good work of providing resources to the weaker sections. As noted by T.K. Velayudhan and V. Sankaranarayan, **"RRBs are not just rural credit agencies. They are more than that, they are a fruitful exercise in bank-led rural growth."**

To solve the problem of losses of RRBs and improve their viability, efforts have been made in recent years to restructure their operations and infuse fresh capital into them. RRBs have been granted greater flexibility in their lending operations: they can lend to non-target groups, issue drafts, get into nonfunds business, etc. Interest rates have also been deregulated.The most important move taken for rehabilitation of RRBs is that, whereas previously they were "mandatorily" required to extend credit to the priority sector only, the monetary policy of April 1997, allowed them to target just 40 per cent advances to priority sector. This places them on par with the commercial banks. This, therefore, is a major step towards creating a level playing field between RRBs and the rural branches of the commercial banks. As a result of these measures, the financial performance of RRBs has improved. While they incurred losses of ₹ 426 crore in 1995-96, their net profits rose to ₹ 1,884 crore in 2009-10 and further to ₹ 1,988 crore in 2010-11. However, critics have pointed out that by placing RRBs on par with the commercial banks, the entire purpose behind setting up these banks has been lost (which was concentrating on the credit requirements of the priority sector only and providing it with concessional loans).

In September 2005, the Government of India initiated the process of amalgamation of RRBs. This, it claims, would help in 'consolidating and strengthening RRBs'. Prior to the process of amalgamation, 196 RRBs sponsored by 27 scheduled commercial banks and one State Cooperative Bank were operating in the country with a network of 14,484 branches spread over 523 districts as on March 31, 2005. Consequent upon the amalgamation, the number of RRBs declined to 82 operating in 26 States and in one Union Territory covering 619 districts with a network of 15,475 branches, as on March 31, 2010.

In the Union Budget for 2012-13, the Finance Minister announced the setting up of a short-term RRB Credit Refinance Fund to enhance the capacity of RRBs to disburse short-term crop loans to the small and marginal farmers. An allocation of ₹ 10,000 crore is to be made to NABARD for refinancing the RRBs through this fund.

2.1.6 NATIONAL BANK FOR AGRICULTURE AND RURAL DEVELOPMENT (NABARD)

The most important development in the field of rural credit has been the setting up of the National Bank for Agriculture and Rural Development (NABARD) in July 1982. It took over from Reserve Bank of India all the functions that the latter performed in the field of rural credit. Designed specifically as an 'organisational device for providing undivided attention, forceful direction and pointed focus, to the credit problems of the rural sector', **NABARD is now the apex bank for rural credit**.

Functions of NABARD

NABARD was established as a development bank to perform the following functions:

1. To serve as an apex financing agency for the institutions providing investment and production credit for promoting various developmental activities in rural areas;
2. To take measures towards institution building for improving absorptive capacity of the credit delivery system, including monitoring, formulation of rehabilitation schemes, restructuring of credit institutions and training of personnel;
3. To coordinate the rural financing activities of all institutions engaged in developmental work at the field level and liaison with the Government of India, the State Governments, the Reserve Bank and other national level institutions concerned with policy formulation; and
4. To undertake monitoring and evaluation of projects refinanced by it.

NABARD's refinance is available to State Cooperative Agriculture and Rural Development Banks (SCARDBs), State Cooperative Banks (StCBs), Regional Rural Banks (RRBs), commercial banks and other financial institutions approved by the Reserve Bank, while the ultimate beneficiaries of investment credit can be individuals, partnership concerns, companies, State-owned corporations or cooperative societies. Production credit is generally extended to individuals.

NABARD and Rural Credit

An idea about NABARD's assistance to agriculture can be had from the following details:

1. Credit extended by NABARD. NABARD provides short-term credit facilities to StCBs for financing Seasonal Agricultural Operations (SAO); marketing of crops; pisciculture activities; production/procurement and marketing activities of cooperative weavers' societies; purchase and sale of yarn by apex/regional societies; production and marketing activities of industrial cooperatives; financing of individual rural artisans through PACS; purchase and distribution of fertilisers and allied activities; and marketing activities. Medium-term facilities are provided to StCBs and RRBs for converting short-term loans for financing SAO to medium-term (conversion) loans and for approved agricultural purposes. Long-term loans are provided to the State Governments for contributing to share capital of cooperative credit institutions. During 2010-11, NABARD sanctioned total credit limits aggregating ₹ 35,273 crore as against ₹ 25,661 crore during 2009-10, for various short and medium-term purposes to StCBs and RRBs, and long-term loans to the State Governments.

NABARD's refinance policy on short-term SAO (Seasonal Agricultural Operations) for cooperative banks and RRBs lays emphasis on augmentation of the ground-level credit flow through adoption of region-specific strategies and rationalisation of lending policies and procedures.

2. Rural Infrastructure Development Fund. RIDF-I was established in 1995-96 with the major objective of providing funds to State governments and State-owned corporations to enable them to complete various types of rural infrastructure projects. RIDF has been continued on an annual basis. The annual allocation of funds under the RIDF has gradually increased from ₹ 2,000 crore in 1995-96 (RIDF-I) to ₹ 18,000 crore in 2011-12 (RIDF-XVII). Aggregate allocations have reached ₹ 1,34,000 crore. In addition, a separate window was introduced in 2006-07, for funding the rural roads component of the Bharat Nirman Programme, with a cumulative allocation of ₹ 18,500 crore till 2010-11. Budget allocation for RIDF-XVIII for 2012-13, has been raised further to ₹ 20,000 crore.

As against the total allocation of ₹ 1,34,000 crore, encompassing RIDF-I to RIDF-XVII, sanctions aggregating ₹ 1,32,808 crore have been accorded to various State governments and an amount of ₹ 86,631 crore disbursed up to end-December 2011. This shows that the proportion of disbursements in relation to sanctions has been only 65 per cent (i.e., less than two-thirds). Low disbursement of RIDF funds compared to the sanctioned amounts has been an area of concern. Various factors have been attributed to explain this situation, which include high interest cost of funds allocated through RIDF, lack of matching funds with State governments and other procedural hardships. However, National Rural Roads Development Agency (NRRDA) had been disbursed the entire ₹ 18,500 crore sanctioned for it (under RIDF XII-XV) by March 2010.

Loans under RIDF are given for various purposes like irrigation projects, watershed management, construction of rural roads and bridges, etc. The projects, however, have shown considerable time overruns. According to NABARD, the reasons for this are: (*i*) mismatch between physical and financial disbursements; (*ii*) the implementing departments (of governments) were not adequately funded by the State governments; (*iii*) the projects faced problems of land acquisition, forest and environmental clearance; (*iv*) inadequate monitoring and inability to take corrective action by government officers; and (*v*) lack of transparency among the key functionaries.

3. Microfinance Innovations. The access to credit for the poor from conventional banking is often constrained by lack of collaterals, information asymmetry and high transaction costs associated with small borrowal accounts. Micro-finance has emerged as a viable alternative to reach the hitherto unreached for their social and economic empowerment through social and financial intermediation. It involves provision of thrift, credit and other financial services and products of very small amounts to the poor for enabling them to raise their income levels and thereby improve living standards. **In operational terms, microcredit involves small loans, up to ₹ 25,000, extended to the poor without any collateral for undertaking self-employment projects.** Such loans are provided through microfinance institutions (MFIs). One of the most popular models of MFI has been the *Grameen Bank* model, developed originally in Bangladesh and replicated in various parts of the world. Under this model, non-government organisations (NGOs) form and develop self-help groups (SHGs) and provide credit to them.

Microfinance schemes in India have emerged as major avenues for bringing the poor within the purview of the organised financial sector. In this context, NABARD has played a key role in the development and promotion of SHGs and other microfinance institutions and in providing refinance at special rates. **SHG-bank linkage programme has now emerged as a major microfinance initiative.** Under this programme, as on March 31, 2011, 74.62 lakh SHGs maintained saving accounts with banks with total saving of ₹ 7,016 crore. As on March 31, 2011, 47.87 lakh SHGs had outstanding (cumulative) bank loans of ₹ 31,221 crore. Alongside SBLP (SHG-bank linkage programme), microfinance institutions (MFIs) formed by non-government institutions (NGOs) and non-banking finance companies (NBFCs) have emerged as important sources of microfinance delivery in India.

4. Kisan Credit Card Scheme. The Kisan Credit Cards (KCCs) scheme was introduced in 1998-99 to facilitate short-term credit to farmers. Commercial banks, cooperative banks and RRBs are implementing this scheme. Each farmer is provided with a Kisan Credit Card and a passbook for providing revolving cash credit facilities. NABARD

has accelerated the pace of issue of KCCs. Cumulatively up to October 2011, about 10.78 crore cards had been issued. However, the progress of the scheme is not uniform across States, and is dismal in the north-east. This is attributed to low level of loans issued to farmers availing of crop loans from banks; poor financial position of the cooperatives and RRBs in the region; lack of infrastructure facilities which are a hurdle in the way of augmenting credit facilities, etc.

5. Credit Monitoring Arrangement. With a view to providing cooperative banks with more freedom and discretion to operate in an increasingly liberalised and competitive banking environment, NABARD, in consultation with the Reserve Bank, decided to replace the Credit Authorisation Scheme (CAS) with the Credit Monitoring Arrangement (CMA) with effect from the year 2000-01. The banks will, however, have to follow prudence and exposure norms and have to satisfy themselves about the technical feasibility and financial viability of the proposals, creditworthiness of borrowers, risk management, margin, security requirements, etc.

6. Refinance under SGSY. NABARD has issued operational instructions to RRBs and cooperative banks with regard to implementation of Swarnajayanti Gram Swarozgar Yojana (SGSY) on similar lines as was issued by the Reserve Bank for commercial banks. Policy guidelines for refinance support under SGSY were also issued to all financing banks. Banks have been, *inter alia*, advised to evolve suitable norms for grading of SGSY groups at different stages of financing on the illustrative parameters indicated by NABARD.

7. Cooperative Development Fund. NABARD set up the cooperative Development Fund (CDF) in 1993 with the objective of strengthening the cooperative credit instiutitons in the areas of organisational structure, human resource development, resource mobilisation, recovery position, etc. The assistance is provided to StCBs/SCARDBs/CCBs/ PCARDBs by way of a grant or a soft loan or both.

8. Supervision. NABARD is the supervisory authority for StCBs, CCBs and certain other State level cooperative institutions such as SCARDBs. Accordingly, NABARD undertakes periodic on-site inspection of these organisations and since 1998-99 this has been supplemented by a system of off-site surveillance.

The three main functions of NABARD are refinancing, institutional development and inspection of client banks. As noted by the ACRC, an evaluation of these functions shows that the refinance function has attracted relatively more attention and resources over the years. Moreover, a major chunk of the personnel of NABARD is stationed at the head office, regional offices and sub-offices. As pointed out by V. Krishnadevan, "it is somewhat strange that an agency dealing with agricultural finance and which is supposed to be in touch with groundroot realities, houses a significant number of its employees in cities." A major problem today is the lack of healthy credit delivery motivation at the field level for sustaining rural credit on a continuous basis. Despite making efforts, NABARD has not been able to strengthen cooperatives as the management control vests in the State governments. The latter, however, have failed to discipline the errand units.

2.1.7 FINANCIAL INCLUSION

Massive expansion of institutional sources of credit has taken place after Independence. Now more than 60,000 branches of commercial banks, more than 1,00,000 primary agricultural credit societies, more than 10,000 branches of RRBs and over 2,000 primary urban banks serve the people of the country, apart from several other formal financial institutions. However, this large infrastructure that has penetrated even remote rural areas is still able to serve only a small part of the potential clientele. The problem is particularly severe in rural areas. However, the crisis is not confined to the farm community. A very large number of unorganised non-farm enterprises which absorb the shocks of poor employment growth in agriculture and organised industry and which can thrive only on the basis of external credit support, are faced with severe financial exclusion.

The incidence of financial exclusion is clearly brought out by the NSSO and other field surveys. For instance, of the 148 million rural households, more than 60 per cent receive no loans from institutional or non-institutional agencies. Of the 89 million farmer households, more than 50 per cent do not enjoy any such loan facility. Amongst the indebted rural or farm households, about 43 per cent are serviced by moneylenders and other non-institutional agencies. For the first time after Independence, the share of institutional agencies in total rural indebtedness slipped from 64 per cent in 1991 to 57 per cent in 2002; the share of moneylenders alone shot up from 17.5 per cent to 29.6 per cent. Thus, **about 48 per cent of all rural households, 51 per cent of farm households and 78 per cent of rural non-farm households do not have access to banking services.** According to a recent study, **the dependence on non-institutional agencies is high amongst low landholding classes: it is as high as 47 to 77 per cent amongst farmers owning below one hectare of land and 42 per cent for the 1 to 2 hectares category.**

The poor access to bank credit is much more severe amongst unorganised non-farm enterprises. According to data in one NSSO round, only 4.13 per cent of these enterprises had access to institutional credit and another 4.10 per cent had access to non-institutional credit including those from relatives and moneylenders. Thus, of the estimated 58 million of enterprises as on March 2007, a preponderant number is without institutional credit support. What is more, their ranks are swelling with an absolute reduction in organised sector employment and with 63 per cent of cultivator households being marginal farmers (76 million of operational holdings) and not being able to eke out a decent living in farming, are possibly craving for opportunities in allied activities and outside farming, as microenterprises.

The Challenges of Financial Inclusion

The data presented above clearly bring out the fact that the incidence of financial exclusion is widespread and mindboggling. Therefore, as various committees and working groups appointed by the government have emphasised time and again, "financial inclusion" **(which can be defined as delivery of banking services at an affordable cost to the vast sections of disadvantaged and low-income groups)** is a must. In the case of credit, the proper definition of the financially excluded would include households who are denied credit in spite of their demand. A wider definition of financial inclusion would include, alongwith credit, various other financial services such as savings, insurance, payments and remittance facilities by the formal financial system to those who tend to be excluded.

The widespread financial exclusion of the poor from the banking system is due to the conventional banking mindset which pursues big volumes and large clients with the underlying logic of too big to fail. A large part of the population is excluded, the familiar arguments for their exclusion being as follows: "the excluded are unorganised, and hence, difficult to cover; the volume of business offered by the sector is commercially insignificant; the widely dispersed nature and small individual requirements render services to the sector unviable; the economic value addition by the sector is not high, and hence loans given would turn into non-performing assets (NPAs) on account of high default rates; the financial constraints faced by the sector should be alleviated through welfare handouts; not by commercial loans..."

Supply and Demand Side Issues. Supply side problems in financial inclusion during 1990s, have been: *(i)* narrowing of the branch network in rural areas; *(ii)* fall in credit-deposit ratios in rural areas; *(iii)* disproportionate decline in agriculture credit to small and marginal farmers; *(iv)* worsening of regional inequalities in rural banking — steepest decline in credit-deposit ratio in eastern and south-eastern States; and *(v)* crippling of the RRBs. On the demand side, some of the constraining factors for financial inclusion have been: *(i)* low productivity and risk and vulnerability of small and marginal farmers; *(ii)* low skill and poor market linkages for rural non-farm and urban workers; *(iii)* vulnerability to risk for rural landless and urban poor; and *(iv)* inadequate awareness and low financial literacy.

Steps for Financial Inclusion

1. Expansion of Public Sector Banks' Network. As stated earlier, institutional credit has increased considerably in recent years. As against the target of doubling rural credit in three years as laid down in June 2004, actual institutional credit was doubled in just two years. In fact, over a period of eight years (2003-04 to 2010-11), institutional credit to agriculture has increased more than five times from ₹ 86,981 crore to ₹ 4,46,779 crore. However, it is not clear 'how much' financial inclusion has taken place as a result of this massive expansion of institutional credit to agriculture. In fact, without the expansion of the rural branch network by the financially strong and dominant public sector banks with appropriately qualified staff for diversified agriculture and microenterprises, the objectives of rapid credit expansion are sure to be stifled. **The banking system requires a more broad-based and strong institutional structure reasonably widespread regionally and functionally.** In this respect, the reach as well as the financial strength of the RRBs being weak, their reorganisation is unlikely to meet the needs of the vast regions of the national economy. For purposes of financial inclusion, the public sector banks will have to take the lead, expand their branch network even as they co-opt cooperatives and other local agencies to supplement and support their banking business, appoint qualified staff for farm and non-farm lendings and undertake to expand their credit base amongst the informal sectors.

However, if the target is to link up the entire unorganised sector population to the banking system, the banks will have to scale up their operations, and increase their capacity by two to three times. This scaling up effort would involve significant investment costs as well which would have to be recovered. These costs, if passed on to small clients could make their access to banks even more difficult. Therefore, in an effort to create financial infrastructure required for access to financial services by one and all, the State would have to reimburse capital investments of banks (this reimbursement could be in proportion to the additional clientele covered from the unorganised sector). As argued by N. Srinivasan, **"Financial inclusion as a public policy objective is meaningful only when costs of increasing outreach are borne in the initial period by the State."**

2. Revitalisation of Rural Cooperative Sector. In January 2006, the Government announced a package for revival of the Short-term Rural Cooperative Credit Structure involving financial assistance of ₹ 13,596 crore. The National Bank for Agriculture and Rural Development (NABARD) has been designated the implementing agency for the purpose. States are required to sign memorandum of understandings (MOUs) with the Government of India and NABARD, committing to the implementation of the legal, institutional and other reforms as envisaged in the revival package. So far 25 States have executed such MOUs. This covers 96 per cent of the PACSs and 96 per cent of the DCCBs in the country. As of November 2011, an amount of ₹ 9,003 crore has been released by NABARD as Government of India share for recapitalisation of 53,205 PACSs in seventeen States.

The most justifiable reason to speed up the ongoing revival plan of the rural cooperative sector emanates from the potential of this sector in enlarging the formal financial network especially in rural areas with the existing infrastructure, especially with the wide geographical outreach of PACSs. **As at end-March 2009, PACSs functioning in the country covered six lakh villages with a total membership of around 13.2 million.** This wide penetration of PACSs across villages as well as across small depositors/borrowers would act like a catalyst while pursuing the objective of 100 per cent financial inclusion. However, there are some issues that need to be considered as pointed out in Box 1.

Box 1: Role of Rural Cooperatives in Financial Inclusion — Some Emerging Issues

The wide network of rural cooperatives spread across the country is considered as a potential instrument to reach out the marginalised and poor sections of the society. In this context, a comparative analysis of the geographical spread as well as banking business undertaken by rural cooperatives across different regions of the country is necessary. Region-wise data on operations and performances of rural cooperatives revealed that while the StCBs, which are the nodal institutions in short-term structure of rural cooperatives are present in every State, the DCCBs are heavily concentrated in Central and Southern Regions of the country. The banking network of DCCBs were found to be shallow in Western and Eastern Regions of the country while there is no DCCB in North-Eastern Region. Not only a fewer number of DCCBs have presence in Western and Eastern parts of the country, the percentage of loss making entities are also observed to be higher in these two regions. On the other hand, the PACSs, the ground level institutions within short-term rural cooperatives, are concentrated in Western and Eastern parts of the country. Among various regions, the percentage share of loss making PACSs in total number of PACSs operating is highest in Southern Region of the country.

Within the long-term credit structure, SCARDBs are concentrated in Central Region while more than 60 per cent of total PCARDBs are located in Southern Region of the country. Notably, the number of PCARDBs operating in Western Region is very few and also almost all the entities in Western Region were loss making as at end-March 2010.

From the region-wise data of rural cooperatives, it can be concluded that the network of these institutions, though widespread are not uniformly present across different parts of the country. More importantly, the network of rural cooperatives was found to be significantly weak in North-eastern Region of the country, thus, limiting the potential of these institutions for financial inclusion. Also, StCBs witnessed their highest NPA ratio in the North-eastern Region of the country. As at end-March 2010, only 4 per cent of total PACSs were operating in North-eastern region. SCARDBs operating in North-eastern region also witnessed NPA ratio close to 50 per cent. The low number of rural cooperatives operating in North-eastern region as well as their poor financial health remains a matter of concern.

As at end-March 2010, financial performances of DCCBs, SCARDBs and PCARDBs deteriorated. The fall in profits of these cooperatives could be attributed to increasing operating expenses. Rising operating expenses of these cooperatives indicate operational inefficiencies. This suggests that a comprehensive planning to streamline the business activities and human resource development initiatives is required in this regard.

Undoubtedly, PACSs can be utilised to further financial inclusion given their wide geographical coverage. However, since only members can borrow from PACSs, **there is a need to increase the membership per PACS.** As at end-March 2010, the number of members per PACS decreased to 1,336 from 1,384 at end-March 2010, Further, the membership per PACS was found to be low in Western and Central region. Also, borrowers per PACS were low in the North-eastern, Western and Central regions of the country (See Table below). The financial condition of many PACSs is bad and urgent steps are required to tackle this problem. Deposit mobilisation needs to be encouraged and banking business per PACS needs to be improved (particularly in PACSs operating in North-eastern, Western and Central regions). However, **the most important issue would be reduction of overdues of PACSs, which is endangering the financial health of these institutions.** Thus, adequate reforms to improve the financial health of PACSs alongwith correcting the existing regional imbalances would bring a large number of small depositors/borrowers hailing from rural areas into the formal banking system and facilitate the process of financial inclusion.

Region-wise Details of Membership of PACSs (at at end-March 2010)

Region	Members per PACS	Percentage of SC/ST members	Percentage of rural artisans, small and marginal farmers	Borrowers per PACS	Percentage of SC/ST borrowers	Percentage of rural artisans, small and marginal borrowers
Northern	862	27.7	72.3	464	16.9	83.1
Eastern	2,130	40.8	59.2	720	27.8	72.2
Central	665	47.3	52.7	297	38.5	61.5
Western	571	13.3	86.7	147	16.2	83.8

Southern	3,064	18.3	81.7	2,215	8.7	91.3
North-eastern	1,031	35.2	64.8	73	32.2	67.8
All India	1,336	28.9	71.1	632	17.1	82.9

Source: Reserve Bank of India, *Report on Trend and Progress of Banking in India*, 2010-11 (Mumbai, 2011), p. 126 and *Report on Trend and Progress of Banking in India,* 2009-10 (Mumbai, 2010), p. 130.

3. SBLP and MFIs. The most important initiatives for financial inclusion are the SBLP (Self-help Group-Bank Linkage Programme) and MFIs (microfinance institutions). The SBLP of NABARD started as a pilot project in 1992. There are now 74.62 lakh SHGs under this programme, comprising a large number of poor households, who are accessing credit through commercial and cooperative banks. Following the RBI guidelines in 2000, commercial banks including RRBs have been providing funds to MFIs for online lending to poor clients. Though initially only a handful of NGOs were into financial intermediation using a variety of delivery methods, their numbers have increased considerably. MFIs have been playing an important role in substituting moneylenders and reducing the burden of formal financial institutions. However, in 2010-11, this sector ran into difficulty with reports of unfair practices by MFIs to recover loans and a number of farmer suicides attributed to these practices. Accordingly, the Reserve Bank of India set up a committee headed by Y.H. Malegam to study and advise on the microfinance sector. Based on the recommendations of the Malegam Committee Report, the Reserve Bank of India announced the creation of a separate category of Non Banking Financial Company – Microfinance Institution (NBFC-MFI) in a circular issued on December 2, 2011. The main contents of this circular are presented in Box 2.

Box 2: RBI Circular on NBFC-MFI (December 2, 2011): Main Features

- For an NBFC to qualify as NBFC-MFI, the minimum Net Owned Fund (NoF) requirement will be ₹ 5 crore. Those located in the North-eastern region should have a minimum NoF of ₹ 2 crore for purposes of registration. The existing NBFCs to be classified as NBFC-MFIs will be required to comply with the norm from April 1, 2012.
- Loan can be disbursed to a rural household with annual income not exceeding ₹ 60,000 and to an urban household with annual income not exceeding ₹ 1,20,000.
- Loan amount not to exceed ₹ 35,000 in first cycle and ₹ 50,000 in subsequent cycles.
- Total indebtedness of the borrower should not exceed ₹ 50,000.
- Tenure of loan not to be less than 24 months for loan amount in excess of ₹ 15,000 with prepayment without penalty.
- Loan to be extended without collateral.
- Loan to be repayable on weekly, fortnightly or monthly instalments at the choice of the borrower.
- Under the new regulation, NBFC-MFIs shall maintain an aggregate margin cap of not more than 12 per cent. The interest cost will be calculated on average fortnightly balances of outstanding borrowings and interest income is to be calculated on average fortnightly balances of outstanding loan portfolio of qualifying assets.
- Interest on individual loans will not exceed 26 per cent per annum and calculated on a reducing balance basis. Processing charges shall not be more than 1 per cent of gross loan amount. Processing charges need not be included in the margin cap or the interest cap.
- NBFC-MFIs shall recover only the actual cost of insurance for group, or livestock, life, health for borrower and spouse. Administrative charges where recovered, shall be as per IRDA guidelines.
- Under the new regulation, NBFC-MFIs can lend to individual borrowers who are not member of Joint Liability Group (JLG)/Self-help Group (SHG) or to borrowers that are members of JLG/SHG.

- However, a borrower cannot be a member of more than one SHG/JLG and not more than two NBFC-MFIs should lend to the same borrower.
- There can be only three components in the pricing of the loan, *viz.,* the interest charge, the processing charge and the insurance premium (which includes the administrative charges).

2.1.8 SUMMARY

This unit emphasizes on the need for agricultural finance. Then it brings out both institutional and non-institutional finance and their importance. It also lays emphasis on the role of NABARD as the apex institution for providing agricultural finance for rural development. Lastly, it concludes with financial inclusion.

2.1.9 SELF ASSESSMENT QUESTIONS

1. Give the reasons for need of agricultural finance.
2. Explain different sources of agricultural finance available in India.
3. Discuss the importance and role of NABARD as the apex institution in providing finance for developing agriculture and rural economy.
4. Examine initiative taken by the govt. for easing agricultural finance in India.

Key Terms

1. **Zamindari System**: During British colonial rule, the Zamindari system was established. Zamindars were intermediaries who collected revenue from peasants on behalf of the British government. They were granted large landholdings and had significant control over land distribution and administration.

2. **Ryotwari System**: This system was implemented by the British in parts of India, particularly in Madras (now Tamil Nadu), Bombay (now Maharashtra), and parts of the United Provinces (now Uttar Pradesh). Under this system, individual peasants were recognized as the owners of land, and they paid revenue directly to the British government.

3. **Mahalwari System**: Introduced by the British in areas like Punjab, North-Western Provinces (now Uttar Pradesh), and parts of Central India, this system involved the collection of revenue from entire villages or mahals. The responsibility for payment fell on the village as a whole or on large landholders within the village.

4. **Community Land Tenure**: In some regions, particularly tribal areas and hilly terrains, community-based land tenure systems prevailed. These systems often involve collective ownership and management of land by the community or tribes.

5. **Tenancy Laws**: Various states in India have enacted laws to regulate the relationship between landlords and tenants, including laws governing rent control, protection of tenant rights, and regulation of land leasing.

6. **Land Reforms**: Post-independence, India initiated land reform measures to address issues of land distribution, tenancy, and agricultural productivity. These reforms included land redistribution, tenancy reforms, abolition of intermediaries, and protection of tenant rights.

7. **Land Ceiling Laws**: To prevent concentration of land ownership and promote equitable distribution of land, many states in India have enacted land ceiling laws, which set limits on the maximum amount of land an individual or family can own.

8. **Forest Land Tenure**: Forest land tenure in India involves various stakeholders, including tribal communities, forest dwellers, government authorities, and conservation organizations. Issues related to forest rights, conservation, and sustainable management are addressed through laws such as the Forest Rights Act, 2006.

Reference:

1. Land Economics-Renne

2. Progress of Land Reforms-U.N.O

3. Economics of Agricultural Production and Resource Use-Heady

4. Economic Organisation of Agriculture-Schultz

5. Introduction to Economics of Agriculture-Black

6. Economics of Agriculture-Cohen

7. Introduction to Agricultural Economic Analysis-Bishop and Toussiant

8. Agricultural Credit-Belshaw

9. Agricultural Price-Thompson and Foots

10. Readings in Agricultural Development (Ed.)-Khurgo

11. Agriculture in Economic Development (Ed.)-Eicher and Witt

12. Readings in Agriculture-Pramit Choudhury

13. Agricultures in an Unstable Economy-Schultz

14. Agricultural Price and Income Policy- Schultz

15. Marketing of Farm Products-Shepherd

2.2 Chapter

AGRICULTURAL MARKETING IN INDIA

Objectives

After completing this chapter, you will be able:

- To know about the agricultural marketing in India
- To understand the importance of cooperative marketing

Structure:

2.2.0 INTRODUCTION, MEANING AND IMPORTANCE OF AGRICULTURAL MARKETING

The role of agricultural market to deliver agricultural product from the farmers to the consumers in the most efficient way

The role of agricultural market is to deliver agricultural product from the farmer to consumer, from the production centre to the consumption centre, in the most efficient way. The term agricultural marketing can be understood from two words, *viz.*, agriculture and marketing. Agriculture comprises all farm activities for growing or raising crops and livestock products for human welfare by using given level of natural resources with a given technology. Marketing comprises all economic activities involved in facilitating the flow of goods and services from production centre to consumption centre. Agricultural marketing, in broad sense, is the performance or operation of all those business activities, that direct the goods and services from the producers to the ultimate consumers. In agricultural marketing, the starting point is the farm or ranch and the final point is consumption by the buyers. Thus, agricultural marketing implies selling of goods and services by the farmers and ranchers. It comprises the performance of all the business

activities and functions, such as assembling, transportation, storeying, buying, standardization, grading, processing, sales promotion and selling of agricultural goods and services etc. According to Thomsen, "agricultural marketing comprises all the operations, and the agencies conducting them involved in the movement of farm produced foods, raw materials and their derivatives, such as textiles, from the farms to the final consumer and effects of such operations on farmers, middlemen and consumers."

2.2.1 PROBLEMS OF AGRICULTURAL MARKETING

For a long period of time Indian agriculture was mostly in the nature of 'subsistence farming'. The farmer sold only a small part of his produce to pay-off rents, debts and meet his other requirements. Such sale was usually done immediately after harvesting of crops since there were no storing facilities. A considerable part of the total produce was sold by the farmers to the village traders and moneylenders often at prices considerably lower than the market prices. The farmers who took their produce to the *mandies* (wholesale markets) also faced a number of problems as they were confronted with powerful and organised traders. In *mandies,* business was carried out by *arhatiyas* with the help of brokers, who were the agents of *arhatiyas.* In fact, there was a large chain of middlemen in the agricultural marketing system like village traders, *kutcha arhatiyas, pucca arhatiyas,* brokers, wholesale, retailers, moneylenders, etc. As a result, the share of farmers in the price of agricultural produce was reduced substantially. For instance, a study by D.S. Sidhu revealed that farmers obtained only about 53 per cent of the price of rice, 31 per cent being the share of middlemen (the remaining 16 per cent being the marketing cost). In the case of vegetables and fruits, the share of farmers was even less — 39 per cent in the former case and 34 per cent in the latter. The share of middlemen in the case of vegetables was 29.5 per cent and in the case of fruits was 46.5 per cent. *Arhatiyas* and brokers, taking advantage of the ignorance and illiteracy of the farmers, used unfair means to cheat them. The farmers were required to pay *arhat* to the *arhatiyas, tulaii* for weighing the produce, *palledari* to unload the bullock-carts and for doing other miscellaneous types of allied works, *garda* for impurities in the produce, and a number of other undefined and unspecified charges. These charges often varied from person to person. Another malpractice in the *mandies* related to the use of wrong weights and measures.

In addition to the above defects in the agricultural marketing system in India — presence of a large number of middlemen and widespread prevalence of malpractices in the *mandies* — there were a number of other problems as well. For instance, there was absence of proper warehousing facilities in the villages. As a consequence, the farmer was compelled to store his products in pits, mud-vessels, *kutcha* storehouses, etc. These unscientific methods of storing led to considerable wastage. Some part of the produce used to get rotten and unfit for human consumption while some part was eaten away by pests and rodents. At times, as much as one third of farmer's produce was lost in this way. Neither was there any provision for grading of agricultural produce. The practice usually prevalent was the one known as *dara* sales wherein heaps of all qualities of produce (good as well as bad) was sold in one common lot. Thus, there was no incentive to use better seeds and produce better varieties. Transportation facilities were also highly inadequate and only a small number of villages were joined by railways and *pucca* roads to mandies. Most of the roads were *kutcha* roads not fit for motor vehicles and the produce was carried on slow moving transport vehicles like bullock-carts. Obviously such means of transport could not be used to carry produce to far-flung places and the farmer had to dump his produce in nearby market even if the price obtaining in this market was considerably low. Most of the farmers had virtually no contact with the mandies and, in the absence of marketing information system, they had no knowledge regarding the prices ruling in different mandies. Therefore they had no option but to accept whatever price was offered to them. Since the ordinary Indian farmer was poor and lacked staying power, he tried to sell off the produce immediately after the harvesting of crops though prices at that time are generally low (as there are excessive supplies in the market at that time). Availability of credit could have enabled the farmers to postpone such 'forced sales' and wait for better

prices. But, as noted in the section on 'Agricultural Credit', there was a total lack of institutional sources of credit and the farmers were almost totally dependent on the moneylenders whose sole objective was to exploit the farmers. In fact, the moneylenders often forced the farmers to sell produce to them at prices lower than the market prices in return for the loans granted to them.

2.2.2 THE MARKET STRUCTURE, ORGANIZATION AND CLASSIFICATION OF AGRICULTURAL MARKET

Agricultural markets are structured and organized into various categories taking into account the time, area, location, amount of commodities and very characteristics of agricultural commodities, such as seasonality, perishability, bulkiness and variations in qualities. Usually, in the areas of adequate and well distributed rainfall or adequate irrigation facilities farmers raise crops in three seasons, *viz.,* Kharif, Rabi and Summer and the market becomes very wide and extensive. On the other hand, in areas with scanty rainfall or inadequate irrigation facilities they grow one time crop, i.e., Kharif and the market becomes very narrow and limited. In the years of good rainfall, farmers have good production and prices are falling and in the years of low rainfall or low production prices are rising. Secondly, most of the agricultural products are perishable in nature and their markets become localized in order to avoid marketing risks. The prices of and arrivals of perishable products are subjected to fluctuations. Degree of perishability decide the organization and structure of market for instance, when the cash crops like cotton, groundnut, sugarcane fetch wide national and international markets, most perishable goods like fish, milk, egg, fetch normally localized markets. For these goods, storage and processing activities widen structure of market. Thirdly, the characteristics of bulkiness adds to the transportation, storage labour cost and thus, limit the market size. Fourthly, we have large variations in the quality of agricultural products such as size, colour, freshness, smell, appearance, etc. This calls for scrupulous methods of standardization, grading and processing of agricultural products becomes acceptable to consumers.

On the basis of area, time, locations and number of goods, agricultural markets may be classified into following categories.

(1) Local Markets: These markets are also called village markets or primary markets or village haats. The area of operation of these markets is confined to a small village or a group of villages, which are nearby or close to each other. In these village markets, perishable commodities like vegetables, fruits, fish, milk, etc., are being transacted. Such markets may be regular or occational in their operations. In some areas, local markets are being conducted daily, while in other areas, these are conducted once in a week or twice in a week. Shandies, fairs, etc., which are held occasionally on special important days would also come under local markets or primary markets. Tribal markets in Odisha, Chattisgarh, Madhya Pradesh are sort of primary. Besides, markets for food cereals, pulses, vegetables, fish, meat and milk; Cattle markets, sheep markets, etc., also come under primary markets. The area of operation of village markets is confined to a small village or a group of villages. Major transactions of goods and services take place among the buyers and sellers of these villages.

(2) Primary Wholesale Markets: These are located in big towns or taluks or mandals or subdivisional headquarters. All types of agricultural commodities from the village markets are pooled here and transactions take place between the producers and the traders.

(3) Secondary Wholesale Markets: These markets are found in the district headquarters dealing with major agricultural commodities like rice, pulses, oilseeds, chillies, etc. Wholesalers and village traders are the main participants in these markets. Bulk of goods comes from primary wholesale markets or village markets. Transactions of the commodities take place in large quantities. We find many commission agents, brokers, hamalies, weighmen, etc., working in these markets for facilitating the markting operations.

(4) Regional Markets: The area of operation of the market is relatively larger than that of local, primary and wholesale markets. The area of operation of this market covers four to five districts. Sometimes, regional markets cover a State. Foodgrain markets are the examples to be cited under regional markets. Fruit markets operated in the State are called regional markets. They are regular in conducting business transactions in notified commodities.

(5) Terminal Markets: These are located in big cities/State capitals/seaports. These are well-organized markets and controlled by the Government to see that all modern methods of marketing operations take place. Processing and storage activities are predominant in these markets. Consumers, wholesalers and marketing agents are seen in these markets with rigorous transaction activities. Future or forward marketing takes place in these markets. These are situated in big cities like Chennai, Bengaluru, Mumbai, etc.

(6) Seaboard Markets: These are primarily meant for export and import of commodities. Scientifically standardized and graded commodities are transacted. These are located in Mumbai, Chennai, Kolkata, Visakhapatnam, etc.

(7) National Markets: These markets cover the entire country in their operation. National markets are found for commodities having demand over the entire country. Textile, jute, tea markets, etc., are the relevant examples.

(8) International Markets: In these markets the commodities are sold in all the nations of the world. The market area of operation is extended over the entire globe. These markets exist for commodities like cashew, coffee, tea, spices and condiments, gold, silver, diamonds, machinery, etc. Nowadays, even textiles, rice, wheat, sugar, cut flowers, fruits, processed products, etc., have international market.

2.2.3 GOVERNMENT MEASURES TO IMPROVE THE SYSTEM OF AGRICULTURAL MARKETING

After Independence, the Government of India adopted a number of measures to improve the system of agricultural marketing, the important ones being establishment of regulated markets, construction of warehouses, provision for grading and standardisation of produce, standardisation of weights and measures, daily broadcasting of market prices of agricultural crops on All India Radio, improvement of transport facilities, etc.

Organisation of Regulated Markets

Regulated markets have been organised with a view to protect the farmers from the malpractices of sellers and brokers. The management of such markets is done by a Market Committee which has nominees of the State Government, local bodies, *arhatiyas,* brokers and farmers. Thus, all interests are represented on the committee. These committees are appointed by the government for a specified period of time. Important functions performed by the committees can be summarised as follows: (*i*) fixation of charges for weighing, brokerage, etc.; (*ii*) prevention of unauthorised deductions, underhand dealings and wrong practices by the *arhatiyas;* (*iii*) enforcing the use of standardised weights; (*iv*) providing up to date and reliable market information to the farmers; and (*v*) settling of disputes among the parties arising out of market operations.

As would be clear from the above, regulated markets remove most of the defects of the unregulated marketing system. In such markets, licences are issued to the *arhatiyas* and brokers for carrying on their operations. In the event of any unfair practices adopted by them, their licences can be cancelled. Thus, these intermediaries are not able to indulge in malpractices like using wrong weights and measures, making unauthorised deductions, etc. Thus, the farmers are expected to obtain fair prices for their produce.

On account of the above advantages of regulated markets, the government has promoted the setting up of such markets. Most of the States and Union Territory governments have enacted legislations (Agriculture Produce Marketing Committee Act) to provide for regulation of agricultural produce markets. **There are 7,157 regulated markets in the country as on March 31, 2010.** The country has 21,221 rural periodical markets, about 15 per cent of which function under the ambit of regulation. Kerala, Manipur, Andaman and Nicobar Islands, Dadra and Nagar Haveli, Daman and Diu and Lakshadweep do not have APMC Act while Bihar has repealed the APMC Act with effect from September 1, 2006. Moreover, rural periodic markets in general and tribal markets in particular have remained outside the developmental ambit of the APMC Act.

Grading and Standardisation

Improvements in agricultural marketing system cannot be expected unless specific attempts at grading and standardisation of the agricultural produce are made. The government recognised this quite early and the Agricultural Produce (Grading and Marketing) Act was passed in 1937. Initially grading was introduced for saunf, hemp and tobacco. The net was later enlarged. To facilitate grading, standards for 182 agricultural commodities have so far been laid down. The government set up a Central Quality Control Laboratory at Nagpur and a number of regional subsidiary quality control laboratories. Samples of important products are obtained from the market and their physical and chemical properties are analysed in these laboratories. On these bases, grades are drawn up and authorised packers are issued AGMARK seals **(AGMARK is simply an abbreviation for Agricultural Marketing).** Important commodities graded under AGMARK for internal consumption include cotton, vegetable oils, ghee, cream, butter, eggs, rice, wheat, atta, jaggery, pulses, honey and ground spices.

Use of Standard Weights

One of the main defects of unregulated markets was that non-standard and arbitrary weights were used by the *arhatiyas* and brokers to cheat the farmers. To stop this practice, the government undertook a number of steps. It passed the Standard Weights Act as far back as in 1939. This Act passed by the Central government served as a model for the State governments to pass their own legislations. The Central government adopted the Metric System of Measures in 1958 when an Act to this effect was passed by the Parliament. The metric system replaced all old systems of weights and measures and has introduced uniformity in this respect all over the country though one does find old measures still existing in some pockets of the country (especially in the village markets).

Godown and Storage Facilities

It is necessary to provide a network of godown facilities all over the country so that the farmers are not compelled to sell their produce immediately after the harvesting of crops. This will enhance the bargaining power of farmers and save them from distress sales (which have to be resorted to when the produce gets damaged or rotten lying in open fields). On the basis of godown receipts issued against the produce stored in the godowns, the farmers can also obtain credit from commercial banks and cooperative credit societies. This increases their staying power and enables them to wait till fair prices are promised for their produce.

Keeping such considerations in view, the Rural Credit Survey Committee (1954) recommended a three-tier storage system at: (*i*) the National level, (*ii*) State and district level, and (*iii*) Village and rural level. In accordance with these recommendations, Central Warehousing Corporation (CWC) was set up in 1957 and this was followed by establishment of State Warehousing Corporations (SWCs) in a number of States. Food Corporation of India was also set up at the national level. As on February 1, 2012, FCI had a covered storage capacity of 300.83 lakh tonnes (owned and hired) while the State Agencies/(SWCs) had covered capacity of 153.54 lakh tonnes which is being used for storage of central pool stock of foodgrains. Thus, the total covered storage capacity for central pool stock, as on February 1, 2012, was

454.37 lakh tonnes. At the village and rural level, a centrally sponsored scheme for rural godowns was initiated in the Sixth Plan to prevent distress sales by the farmers, particularly the small and marginal farmers, after harvest at the prevailing low price. Since March 2001, the government is implementing a Central sector scheme for the construction of rural godowns.

Dissemination of Market Information

To inform the farmers about the prices prevailing in different markets, the government has initiated a number of steps. For example, prices in important markets are broadcast daily by the All India Radio. Trends on market prices are reviewed weekly in special programmes and talks organised by the A.I.R. and Doordarshan. Market intelligence reports are displayed in a number of markets all over the country. These intelligence reports collect vital information on stocks, market arrivals, sales, prices, etc., and are published periodically. The newspapers also publish agricultural prices either daily or weekly accompanied by a short review of trends. For speedy collection and dissemination of price and market related information to farmers, electronic connectivity is being provided to all important agricultural markets in the country under a Central scheme, **Market Research and Information Network.** Presently, wholesale prices of 300 commodities and about 2,000 varieties are being reported on the Agricultural Marketing Information Network (AGMARKNET) portal from more than 1,800 markets covering all major agricultural and horticultural produce.

Directorate of Marketing and Inspection

This Directorate was set up by the Government of India to coordinate the agricultural marketing activities of various agencies and to advise the Central and State governments on the problems of agricultural marketing. Activities of this Directorate include: *(i)* promotion of grading and standardisation of agricultural and allied commodities; *(ii)* statutory regulation of markets and market practices; *(iii)* training of personnel; *(iv)* market extension; *(v)* market research, survey, and planning; and *(vi)* administration of Meat Food Products Order, 1973. The Directorate also used to implement the Cold Storage order, 1980, notified under the Essential Commodities Act, 1955, which was applicable to the whole of the country except the States of Bihar, Haryana, Punjab, Uttar Pradesh and West Bengal. It aimed at developing cold storage industry in a planned manner, ensuring hygienic and proper refrigeration conditions in cold stores, rendering technical guidance for scientific preservation of foodstuffs and protecting the farmers' interest. With a view to attracting more private investment in cold storage industry, this order was repealed by the government on May 27, 1997.

The Directorate has so far notified grade standards for 200 agricultural and allied commodities. It enforces compulsory quality control before export on many agricultural commodities. It is extending financial assistance to selected regulated markets for providing grading facilities for important commodities like tobacco, jute, cotton, groundnut and cashewnut at the producer's level. It is also implementing a scheme for providing Central assistance for the development of infrastructural facilities in selected regulated markets.

Government Purchases and Fixation of Support Prices

In addition to the measures mentioned above, the government also announces minimum support prices and procurement prices for various agricultural commodities from time to time in a bid to ensure fair returns to the farmers. These prices are fixed in accordance with the recommendations of the Commission for Agricultural Costs and Prices (CACP). Government agencies, like the Food Corporation of India, purchase agricultural commodities from the farmers at these fairly remunerative prices and these purchases, in turn, are sold off by the government at reasonable prices through the public distribution system. Public distribution, therefore, serves two purposes — (*i*) purchasing commodities at prices which ensure a reasonable profit to the producers, thus shielding them from the danger of selling their output at depressed prices; and (*ii*) supplying these commodities at low prices to the ultimate consumers.

Ch. Charan Singh National Institute of Agricultural Marketing

Ch. Charan Singh National Institute of Agricultural Marketing (NIAM) earlier known as the Centre for Agricultural Marketing (CAM) was established in 1988. The main aims and objectives of the Institute are: (*i*) to augment the agricultural marketing infrastructure of the country through programmes of teaching, research and consultancy services; (*ii*) to design and conduct training courses appropriate to the specific identified needs of the personnel and enterprises and institutions that they serve; (*iii*) to undertake research to demonstrate and replicate better management techniques in the field of agricultural marketing; *(iv)* to provide consultancy services for formulating investment projects and for problem solving advice; and (*v*) to offer educational programmes in agricultural marketing for supplementing the existing facilities.

Weaknesses in Agricultural Marketing

According to the Eleventh Five Year Plan, the regulated markets lack even basic infrastructure at many places. When the Agriculture Produce Marketing (Regulation) Acts were first initiated, there were significant gains in market infrastructure development. However, this infrastructure is now out of date, especially given the needs of a diversified agriculture. At present, only one-fourth of the markets have common drying yards; trader modules, *viz.*, shop, godown and platforms in front of shop exist in only 63 per cent of the markets. Cold storage units are needed in the markets where perishable commodities are brought for sale. However, they exist only in 9 per cent of the markets at present and grading facilities exist in less than one-third of the markets. The basic facilities, *viz.*, internal roads, boundary walls, electric lights, loading and unloading facilities, and weighing equipment are available in more than 80 per cent of the markets. Farmers' rest houses exist in more than half of the regulated markets. Covered or open-auction platforms exist in only two-thirds of regulated markets. It is evident from the above that there is considerable gap in the facilities available in the market yards. Also, the farmers have to deal with non-transparent methods of price discovery and there is often lack of auction of graded items. Some modern markets with electronic auctioning have been introduced, but they are the exception. All this shows that major modernisation of market infrastructure is required.

Eleventh Five Year Plan proposes to address the following issues related to agricultural marketing — marketing system improvement and conducive policy environment; strengthening of marketing infrastructure and investment needs; improving market information system with the use of Information and Communication Technology (ICT); human resource development for agricultural marketing; and promoting exports/external trade.

2.2.4 COOPERATIVE MARKETING

Though the above measures have improved the system of agricultural marketing to some extent, a major part of the benefits has been derived by large farmers who have adequate 'marketable surplus'. However, the small and marginal farmers continue to sell a major part of their produce to moneylenders to meet their credit needs and these moneylenders offer them very low prices. Therefore, it is essential to form cooperatives of the small and marginal farmers to enable them to obtain fair price for their produce. The advantages that cooperative marketing can confer on the farmer are multifarious, some of which are listed below:

1. **Increases bargaining strength of the farmers.** Many of the defects of the present agricultural marketing system arise because often one ignorant and illiterate farmer (as an individual) has to face well-organised mass of clever intermediaries. If the farmers join hands and form a Cooperative, naturally they will be less prone to exploitation and malpractices. Instead of marketing their produce separately, they will market it together through one agency. This will increase their bargaining strength *vis-a-vis* merchants and intermediaries.

2. **Direct dealings with final buyers.** In certain cases, the cooperatives can altogether skip the intermediaries and enter into direct relations with the final buyers. This practice will eliminate exploiters and ensure fair prices to both the producers and the consumers.
3. **Provision of credit.** The marketing cooperative societies provide credit to the farmers to save them from the necessity of selling their produce immediately after harvesting. This ensures better returns to the farmers.
4. **Easier and cheaper transport.** Bulk transport of agricultural produce by the societies is often easier and cheaper. Sometimes the societies have their own means of transport. This further reduces cost and botheration of transporting produce to the market.
5. **Storage facilities.** The cooperative marketing societies generally have storage facilities. Thus, the farmers can wait for better prices, also there is no danger to their crop from rains, rodents and thefts.
6. **Grading and standardisation.** This task can be done more easily for a cooperative agency than for an individual farmer. For this purpose they can seek assistance from the government or can even evolve their own grading arrangements.
7. **Market intelligence.** The cooperatives can arrange to obtain data on market prices, demand and supply and other related information from the markets on a regular basis and can plan their activities accordingly.
8. **Influencing market prices.** While previously the market prices were determined by the intermediaries and merchants and the helpless farmers were mere spectators forced to accept whatever was offered to them, the cooperative societies have changed the entire complexion of the game. Wherever strong marketing cooperatives are operative they have bargained for, and have achieved, better prices for agricultural produce.
9. **Provision of inputs and consumer goods.** The Cooperative marketing societies can easily arrange for bulk purchase of agricultural inputs like seeds, manures, fertilisers, pesticides, etc., and consumer goods at relatively lower prices and can then distribute them to the members.
10. **Processing of agricultural produce.** The Cooperative societies can undertake processing activities like crushing oilseeds, ginning and pressing of cotton, etc.

In addition to all these advantages, the cooperative marketing system can arouse the spirit of self-confidence and collective action in the farmers without which no programme of agricultural development, howsoever well conceived and implemented, holds much promise of success. They can help in enlarging the marketable surplus of agricultural produce and can even influence the crop-pattern through proper planning.

Progress of Cooperative Marketing in India

Two types of cooperative marketing structures are found in India. Under the first type, there is a two-tier system with primary societies at the base and the State society at the apex. Under the second type, there is a three-tier system with primary societies at the village level, Central marketing societies at the district level, and the State marketing society at the apex. The task of developing cooperative marketing was initiated in the Second Five Year Plan on the recommendations of the All India Rural Credit Survey Report and was extended further in the Third Plan. As a result, cooperative marketing structure was built up at various levels. At present, the cooperative marketing structure comprises 2,633 general purpose primary cooperative marketing societies at the mandi level, covering all the important mandies in the country, 3,290 specialised primary marketing societies for oilseeds, etc., 172 district/Central Federations and the National Agricultural Cooperative Marketing Federation of India Ltd., (NAFED) at the national level. NAFED is the apex cooperative marketing organisation dealing in procurement, distribution, export and import of selected agricultural commodities. NAFED is a central nodal agency of the government for undertaking price support operations for non-perishable commodities such as pulses, oilseeds, and for Market Intervention in perishable horticultural items like potato, onion, grapes, kinno, oranges, eggs, apples, chillies, black pepper, etc.

The total value of agricultural produce handled by marketing cooperatives has increased considerably over the years. However, the development of agricultural cooperative marketing has been very uneven among different States. The financial performance of marketing cooperatives is also far from satisfactory and a number of them are incurring losses. Moreover, the actual coverage of cooperatives in terms of either membership of cultivators in primary societies, or their share in the total marketed agricultural produce in the country, has remained too insignificant, except in a few isolated pockets, to make any dent in the overall marketing of agricultural produce in the country.

Suggestions for Improvement

1. It has been observed that as in other fields of cooperation the gains of cooperative marketing societies have also, by and large, accrued to the large farmers. This is on account of the hold exercised by these farmers on the rural economy. Therefore, it is imperative to make such changes in the cooperative marketing structure that small and marginal farmers are given more representation in these societies so that the benefits of cooperation can percolate to the sections for which they were originally intended, i.e., small and marginal farmers.

2. The activities of the marketing cooperative societies should be further diversified. They should not only arrange for marketing of agricultural produce but should also arrange for adequate storage capacity, means of transport, grading of goods, etc. For this purpose necessary financial and technical assistance should be provided to them by the State governments.

3. The marketing societies should be linked up with credit and other societies. In fact, the development of agriculture is a gigantic task encompassing activities right from the planting of seeds to the final marketing of produce, and much beyond. Accordingly, there is a need for multipurpose societies which can look upon all requirements of the farmers in an integrated way. Particular emphasis needs to be laid on the integration of agricultural processing, credit and marketing activities. Unless the farmer is freed from the clutches of the village moneylender by developing alternative sources of credit, the dependence of the farmer on the moneylender will remain as usual and he will be compelled to sell off his produce to the moneylender (often at very low prices) to pay off his debts.

2.2.5 SUMMARY

This Chapter emphasizes the importance of agricultural marketing for facilitating smooth flow of agricultural goods and services from production centre to consumption centre. It also identifies the problems of agricultural marketing and highlights the government measures to sort out the problems and to curb the exploitation of farmers by middle agents and agencies between the farmers and ultimate consumers by relating markets, bringing price stabilization and reducing price differences between the producer and consumer market segments. Then it analyses the role of cooperative marketing and government measures to improve the system of Agricultural Marketing. Lastly, the chapter suggests some policy measures for improvement of agricultural marketing.

2.2.6 SELF ASSESSMENT QUESTIONS

1. Explain the problems and difficulties in the way of agricultural marketing in India.
2. 'An efficient agricultural marketing is the essence to improve the economic condition of farmers'. Explain.
3. Enumerate the government measures to improve the system of Agricultural Marketing.

Reference:

1. Land Economics-Renne

2. Progress of Land Reforms-U.N.O

3. Economics of Agricultural Production and Resource Use-Heady

4. Economic Organisation of Agriculture-Schultz

5. Introduction to Economics of Agriculture-Black

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13. Agricultures in an Unstable Economy-Schultz

14. Agricultural Price and Income Policy- Schultz

15. Marketing of Farm Products-Shepherd

Key Words

- **Input Costs**: The cost of inputs such as seeds, fertilizers, pesticides, machinery, labor, and fuel directly impacts the cost of production for farmers. Changes in input costs can influence farmers' decisions regarding crop choices, acreage, and production levels, which in turn affect market prices.
- **Weather Conditions**: Weather variability, including rainfall patterns, temperature fluctuations, droughts, floods, and other natural calamities, can significantly affect agricultural production levels and, consequently, prices. Poor weather conditions can lead to crop failures or reduced yields, resulting in higher prices.
- **International Market Trends:** Global supply-demand dynamics, international prices, exchange rates, and trade agreements impact agricultural prices in India, especially for commodities that are traded internationally. Fluctuations in global prices can influence domestic prices through trade channels.
- **Infrastructure Constraints**: Inadequate storage facilities, transportation infrastructure, and market linkages can lead to supply chain inefficiencies, post-harvest losses, and price distortions. Improvements in infrastructure can help reduce these inefficiencies and contribute to more stable and efficient agricultural prices

2.3 Chapter

AGRICULTURAL PRICES IN INDIA

Objectives

After completing this chapter, you will be able:

- To know about the trends in agricultural prices over the planning period
- To understand the need for agricultural price policy and the evolution of agricultural price policy in India
- A critical evaluation of the agricultural price policy of the Government of India
- The measurement of terms of trade between agriculture and industry and the trends of these terms of trade in India

Structure:

2.3.0 INTRODUCTION TRENDS IN AGRICULTURAL PRICE MOVEMENTS

Prices of agricultural commodities have increased more or less continuously over the planning period. The only exception is the period of the First Plan when prices actually fell. We have so far six series of index numbers of wholesale prices — the first has the base 1952-53 = 100, the second has the base 1961-62 = 100, the third has the base 1970-71 = 100, the fourth has the base 1981-82 = 100, the fifth has the base 1993-94 = 100 and the sixth has the base 2004-05 = 100. A study of these series gives the following results:

1. Agricultural prices have shown a continuous tendency to increase. With 1952-53 as base, they increased from 110 in 1950-51 to 123.8 in 1960-61. However, during the First Plan they actually declined from 110 in 1951-52 to 88 in 1955-56. But with the start of the Second Plan, agricultural prices started picking up and have since increased continuously excepting the year 1961-62. With 1961-62 as base, they rose from 102.3 in 1962-63 to 201.4 in 1970-71. With 1970-71

as base, they increased from 100.4 in 1971-72 to 236.5 in 1981-82. With 1981-82 as base, the agricultural price index rose from 107.3 in 1982-83 to 271.2 in 1993-94. With 1993-94 as base, the agricultural price index rose from 116.0 in 1994-95 to 186.7 in 2004-05. With 2004-05 as base, the agricultural price index rose from 103.4 in 2005-06 to 176.6 in 2010-11.

2. Agricultural prices have risen considerably over the years 1962-63 to 2010-11. They more or less doubled over the period 1962-63 to 1970-71, rose by about two and a half times over the period 1971-72 to 1981-82 and again over the period 1982-83 to 1993-94. In a decade 1994-95 to 2004-05, they rose by 61 per cent and again by 71 per cent over a five-year period 2005-06 to 2010-11. A better idea of increase in agricultural prices over the entire planning period can be obtained by splicing all the six series of agricultural prices. Such as exercise shows that **the index of wholesale prices of agricultural commodities increased by about 43 times over the period 1950-51 to 2010-11** (with 1950-51 = 100, the derived agricultural price index for 2010-11 is found to be 4,291).

3. A study of agricultural prices over the period 1955-56 to 2010-11 shows that excepting five years 1961-62, 1968-69, 1975-76, 1978-79 and 1985-86 prices in each year have been higher than immediately preceding year because these are the only five years registering a negative percentage change in prices. Thus, over the period spanning 56 years, prices have increased continuously in 51 years. Prices increased by more than 20 per cent over the previous year in three instances 1964-65, 1973-74 and 1974-75 and by almost 20 per cent in 1991-92.

These trends indicate that there has been a steep rise in the prices of agricultural commodities over the planning period. This has had many adverse effects. Because of the heavy weightage of agricultural commodities in the overall index of wholesale prices in India, this trend of rising prices of agricultural commodities has contributed considerably to overall increase in prices over the decades. The rising spiral of prices has spelt misery to the poorer sections of the population whose purchasing capacity has suffered a substantial erosion.

Prices of most of the agricultural crops have shown a rising trend and have contributed their mite in further pushing up the index of agricultural prices. Moreover, there have been wide fluctuations from year to year in the prices of different agricultural commodities. This causes uncertainty and instability in the markets leading to speculative activities.

2.3.1 NEED FOR STABILIZATION OF AGRICULTURAL PRICES

Rapid and violent fluctuations in agricultural prices have many harmful consequences. For example, steep decline in the price of a particular crop in some year can inflict heavy losses on the growers of that crop. This will reduce their income substantially and also dampen their spirits to cultivate the same crop next year. If this happens to be a staple food item of the masses, supply next year will remain considerably below the demand forcing the government to fill the gap by resorting to imports (in case it does not have an ample buffer stock to meet the acute shortages). If, on the other hand, prices of a particular crop soar very high in a particular year, the consumers are likely to suffer. If the concerned crop constitutes a staple item for consumption, consumers will have to cut down their other expenditures substantially to meet their consumption expenditures on this item. This can have a disastrous effect on other sectors of the economy.

Because of considerations such as these, it becomes necessary to evolve an agricultural prices policy to safeguard the interests of both producers and consumers. In years of surplus, the government should build up buffer stocks through purchases at minimum support prices to ensure that farmers are not penalised for producing more. The minimum support prices fixed by the government should cover all costs of the farmers and guarantee them a certain minimum return over and above these costs. In years of scarcity, the government should release the buffer stocks in a phased manner

so that the interests of the consumers do not suffer and they are able to meet their consumption requirements at reasonable prices. Thus, **the agricultural prices policy of the government should serve a dual purpose — not allowing the prices to rise inordinately and not allowing them to fall below a certain minimum level.** Naturally, for this purpose it becomes necessary for the government to build up buffer stocks and sufficient storage capacity to hold these stocks. An extensive public distribution system is also required to distribute foodgrains and other agricultural commodities at fair prices to the consumers. While fixing minimum support prices and procurement prices, the government has also to ensure that an 'element of incentive' to producers remains, i.e., the prices should be fixed at a level that encourages farmers to produce more. This is a very important consideration from the point of view of developing countries where the object is not merely to ensure 'price and income stabilisation' in the agricultural sector but to use it as an 'instrument of growth' also. Accordingly, **the agricultural price policy in a developing country must have the following objectives: "(1) To protect or insure the producer through guaranteed minimum support price,** which as a stabilisation measure reduces the variability in product prices and therefore price risk of the farmers. The impact of the risk reduction is expected to induce farmers to undertake larger investments and to adopt improved production technology. **(2) To induce the desired outputs of different crops according to growth targets. (3) To induce an increase in aggregate agricultural output through large input use and adoption of high-yielding seed, fertiliser and water responsive technology. (4) To induce farmers to part with a larger proportion of foodgrains production as a marketed surplus. (5) To protect the consumer against an excessive rise in prices,** especially to protect the low income consumers in periods when supplies lag behind demand and market prices rise continually."

2.3.2 AGRICULTURAL PRICE POLICY IN INDIA

The initial price policy at the dawn of Independence was, to a large extent, based on the plethora of controls exercised during the Second World War. It included rigid controls on movement of crops from one State to the other, procurement of foodgrains through a compulsory levy on producers and millers, open market purchases, and rationing in practically all the States. Following the recommendation of the Foodgrains Policy Committee of 1947 for progressive decontrol, restrictions were relaxed. However, a food crisis appeared in 1948 and food prices rose substantially. Accordingly, controls were introduced. Food situation eased in 1953-54 and food controls were practically dismantled. Prices started looking up from the middle of 1955 and partial controls were again introduced.

On the recommendations of the Foodgrains Enquiry Committee, 1957, calling for 'social control over the wholesale trade in foodgrains' and its subsequent endorsement by the National Development Council in November 1958, the Government of India experimented with State trading in foodgrains in April 1959. According to this scheme, State trading was to be confined to two main commodities — wheat and rice. However, the scheme ran into difficulties since it was put into practice in a haphazard way without taking cognizance of economic forces. For instance, procurement prices for wheat were fixed at much lower levels than those dictated by the forces of demand and supply. Accordingly, despite large output, market arrivals of foodgrains were low. Some States imposed a very heavy compulsory levy on the wholesale traders which discouraged the wholesalers on the one hand and on the other, prompted them to adopt unfair and corrupt practices.

1. Organisation of food zones. To introduce an element of stability in agricultural prices, food zones were organised in March 1964. The country was divided into eight wheat zones. Rice zones were formed in South India. On the failure of this experiment, each State was made a separate zone. Movement of foodgrains within a zone was free but restrictions were imposed on movements from one zone to the other. The government took upon itself the task of procuring foodgrains from the surplus States and distributing them to the deficit-States through the public distribution system.

2. Fixation of minimum support prices and procurement prices by the government. The Foodgrains Prices Committee, 1964, recommended the setting up of an Agricultural Prices Commission. It stated that it was desirable that "the price policy of all agricultural commodities should come within the purview of of the Agricultural Prices Commission, so that a balanced and integrated price structure could be evolved and the claims of competing crops on limited resources can be resolved in the perspective of the overall needs of the economy". The Agricultural Prices Commission was, accordingly, set up in January 1965. It was renamed Commission for Agricultural Costs and Prices (CACP) in 1985. Ever since its inception, the Commission has been announcing minimum support prices, procurement prices and issue prices for a number of agricultural commodities. The government has accordingly been fixing these prices for different agricultural commodities for the past several years. **Minimum prices are in the nature of a long-term guarantee to the producers so that in the event of a glut, prices are not allowed to fall below these announced minimum prices.** To ensure this, government indulges in large-scale purchase of foodgrains at the declared minimum prices. **Procurement prices are fixed at a higher level as compared to the minimum support prices and are meant essentially for the purchase of quantities needed by the government for maintaining the public distribution system and for building up buffer stocks. Issue prices indicate the prices at which the government supplies foodgrains through fair price shops and ration depots.**

As far as wheat is concerned, the minimum support price was fixed at ₹ 37.50 per quintal in 1964-65. This was raised to ₹ 57.50 in 1968-69. After this the government did not announce minimum support prices for wheat and resorted to the policy of purchasing all quantities of wheat offered for sale at procurement prices which are higher than the minimum support prices. The procurement price, in turn, was kept at ₹ 56 per quintal in 1965-66 and has been consistently raised upwards. In 1990-91, it was fixed at ₹ 225 per quintal and was raised to ₹ 360 per quintal in 1994-95 and further to ₹ 1,285 per quintal in 2011-12. The procurement price for paddy (common variety) was kept ₹ 77 per quintal in 1977-78. This was raised to ₹ 205 in 1990-91 and further to ₹ 1,080 per quintal in 2011-12. The procurement price for coarse grains was fixed at ₹ 48.29 per quintal in 1965-66, and was consistently raised upwards to ₹ 180 in 1990-91. In 2011-12, the procurement price for coarse cereals (jowar, bajra and maize) stood at ₹ 980 per quintal while for ragi it was ₹ 1,050 per quintal. In fact, procurement prices of almost all crops have been raised substantially during the last few years. While some hike is of course necessary to neutralise the increasing costs of production, the hefty increase in procurement prices is due to the increasingly dominant role being played by the large farmers' lobby in the country's political scene.

3. Rationing and sale through fair price shops. The public distribution system in our country operates through a network of ration shops and fair price shops. Fair price shops are intended to meet the minimum needs of the vulnerable sections of the society. However, these shops are, at present, meeting the requirements of all and sundry. For their extra need of foodgrains, if any, the consumers can turn to the free market. The total number of fair price shops has increased from 2.39 lakh in March 1979 to about 4.75 lakh.

Despite this appearingly massive coverage the public distribution system is, in fact, unable to meet the total requirements of foodgrains of all vulnerable sections of the society. For example, it has been estimated that providing a per poor cereal amount of 100 kgs per annum would require an additional 20 million tonnes. Providing a per poor cereal amount of 186 kgs per annum would, on the other hand, require an additional cereal amount of 52 million tonnes.

4. Other steps. In addition to the measures discussed above, the government initiated a number of other steps to ensure favourable returns to the farmers and reasonable prices to the consumers. These included building up of buffer stocks, State trading, nationalisation of wholesale trade in wheat and rice, procurement from wholesalers, imports of foodgrains, etc.

2.3.3 EVALUATION OF GOVERNMENT'S AGRICULTURAL PRICE POLICY

As stated earlier, the basic objective of the agricultural price policy is to assure the farmers a reasonable return and instil an element of certainty and confidence in them. Though the agricultural price policy in India has succeeded in achieving this objective to a certain extent, it has also contributed to the inflationary trends in the economy and has had some other adverse effects also as would be clear from the following discussion:

1. Injecting an element of certainty and confidence. Prior to the setting up of the Agricultural Prices Commission (later renamed as Commission for Agricultural Costs and Prices) there were wide fluctuations in agricultural prices. However, the position has distinctly improved after the setting up of the CACP. The Commission, after an extensive study of costs of production, prices in previous year and other relevant material announces two sets of prices — minimum support prices and procurement prices. The latter are the prices at which the government purchases foodgrains to meet the requirements of its public distribution system. The former are the 'support' prices at which the government is bound to purchase as much foodgrains as are offered by the farmers. Naturally, minimum support prices are in the nature of an assurance to the farmers that price will not be allowed to fall below this level.

2. Contribution to inflationary trend. CACP has been recommending a hike in procurement prices year after year. In fact, an increase in procurement and minimum support prices (MSP) has became more or less a ritual performed twice a year. In recent years, the large farmers' lobby has become very powerful in political decision making processes and has been able to force increases in procurement prices much higher than those recommended by CACP. Sharp increases in procurement prices have pushed up the price level in the economy as the general price level is very sensitive to the changes in foodgrains' prices. Not only this, the substantial increase in procurement prices over the years has pushed up the carrying cost of buffer stocks of FCI (Food Croporation of India) considerably. This, in turn, has pushed up the food subsidy bill to very high levels.

3. Bias in favour of surplus States. The MSPs benefited farmers in only a few States. Nearly all States in India grow rice, and approximately 20 States grow wheat. However, FCI procures approximately 95 per cent of wheat from three States: Punjab, Haryana and (Western) Uttar Pradesh. Approximately 85 to 90 per cent of rice is procured from 5 States: Punjab, Andhra Pradesh, Haryana, Uttar Pradesh and Tamil Nadu. Because of the sizable margin between the MSP and C2 costs, farmers in these five States received a considerable windfall. Punjab farmers received support totalling ₹ 1,980 crore in 2001-02 which was 43 per cent of total price subsidies. Other States that benefited significantly, but to a much lesser degree, were Haryana ₹ 940 crore, Andhra Pradesh ₹ 490 crore and Uttar Pradesh ₹ 460 crore. The benefits transferred to other States were insignificant.

4. Adverse impact on investment. Hike in procurement prices leads to an additional expenditure by the government. Given the overall resource constraint, the additional expenditure comes at the cost of a decline in fixed investments. While this additional expenditure on stocks favours only rice and wheat (as it is the procurement price of these two crops that has been raised considerably year after year), the decline in fixed investments adversely affects the demand for many non-agricultural sectors. This results in a decline in non-agricultural GDP, which is not adequately compensated by an increase in agricultural GDP. Thus, a hike in procurement prices has an adverse effect on overall GDP growth. For instance, on the basis of their dynamic applied general equilibrium model for India, Kirit Parikh, A Ganesh Kumar and Gangadhar Darbha have concluded that a 10 per cent increase in minimum support prices of wheat and rice leads to a decline in investments by 1.9 per cent and in overall GDP by 0.33 per cent.

5. Distortions in cropping pattern. As pointed out in the *Report on Currency and Finance,* 2001-02, **the agricultural price policy of the government has led to distortions in the cropping pattern. This is due to the reason that while the MSP of rice and wheat (particularly of wheat) has generally been higher than the cost**

of production, that of coarse cereals and pulses has been less than the cost of production. For instance, in 1997-98, the MSP of wheat was ₹ 510 per quintal as against the cost of production of ₹ 418 per quintal while MSP of rice was ₹ 415 per quintal as against the cost of production of ₹ 411 per quintal. On the other hand, the MSP of coarse cereals was only ₹ 360 per quintal as against the cost of production of ₹ 499 per quintal. In the case of arhar, the MSP in this year was only ₹ 900 per quintal as against the cost of production of ₹ 1,221 per quintal. This has made the cultivation of rice and wheat more attractive than pulses and coarse cereals leading to a diversion of area towards them. These tendencies are also helped by the fact that the yield rates of pulses and coarse cereals are much less than the yield rates of wheat and rice.

6. Faulty criterion being used for calculating MSP. CACP uses cost of production as the main criterion to decide the level of MSPs. As correctly pointed out by Ramesh Chand, this is justified when there is a situation of scarcity and augmenting supply is the primary objective. However, when there are signs of emerging surplus, then demand side factors should get primacy in determining the MSP. However, this principle is not being followed in the case of rice and wheat even though their stocks are accumulating and causing a severe burden on fiscal resources.

There are several other problems associated to cost of production being used as a basis for MSPs: (*i*) inefficiency gets in-built into production as farmers do not have to bother if growing a particular crop on land unsuitable for its cultivation would raise cost of production. According to Ramesh Chand, this is exactly what is happening in the case of extension of rice cultivation to the semi-arid regions and sandy soils in Punjab and Haryana, which is creating a host of environmental and natural resources problems in addition; (*ii*) fixing MSPs based on cost of production totally neglects changes in society's preference for a commodity which has several adverse implications. It can cause serious imbalances in what is being produced and what is required or demanded; and (*iii*) MSPs which ignore the demand side discourage private trade from purchases from farmers. Moreover, there are serious difficulties related to the choice of cost items and estimation of appropriate cost for serving as a basis for MSP.

7. Bias in favour of large farmers. Increases in MSP and procurement prices over the years have acted as an incentive to producers to increase their output. However, most of the benefits have been cornered by the large farmers who were able to implement the new agricultural strategy and obtain credit and other inputs easily. It has been estimated that whether for wheat or rice, **in each State the average income transfer to large farmers is approximately 10 or more times greater than those received by marginal farmers.** Using the C2 benchmark, the total transfer per household in Punjab amounts to an average of approximately ₹ 13,000 per year, and ranges from approximately ₹ 3,000 per marginal farmer to ₹ 34,000 for large farmers.

8. Flaws in public distribution system. In the chapter on 'Agricultural Subsidies, Food Stocks and Food Security in India' we have dealt with the public distribution system in detail. The main drawbacks of this system highlighted therein are: (*i*) it is restricted mainly to wheat and rice only while inferior grains, which are the main food of the poor people, have been generally ignored; (*ii*) for a considerable period of planning, the PDS remained limited mostly to urban areas and the coverage of rural areas was very insufficient; (*iii*) PDS supplies are inadequate in regions with a high proportion of population below the poverty line; and (*iv*) PDS has so far been expensive because no efforts were made for 'targeting', i.e., limiting it to the vulnerable sections of the population. Moreover, high cost of running the PDS is threatening its long-run sustainability.

9. Impact on rural poor. As a consequence of increases in foodgrains prices (flowing from increases in procurement prices) hardships of landless labourers and small farmers, who constitute a major portion of rural population, have increased considerably. Benefits of high prices hardly accrue to these sections because they do not supply much marketed surplus and depend mostly on the market for meeting their consumption requirements. For instance, in their study cited earlier, Kirit S. Parikh, A Ganesh Kumar and Gangadhar Darbha point out, on the basis of their dynamic

applied general equilibrium model for India, that increase in MSP leads to a significant worsening of the welfare of the bottom 80 per cent of the rural population and all of urban population. Only the top 20 per cent of the rural population experiences welfare increases in the third year.

10. Price incentives and fiscal squeeze. According to J. Mohan Rao and Servaas Storm, when agricultural prices rise as a consequence of price incentives, public investment relevant to potential output in agriculture actually declines because of a consequent fiscal squeeze. The fiscal squeeze may arise on several counts. "**First**, to the extent that wages are indexed to agricultural prices, wage costs will be raised for private non-agricultural employers and in the public sector; any fall in private profits and output this induces will cut down government tax collections which are predominantly non-agricultural while public sector outlays on wages will also rise... **Second,** to the extent that agricultural price increases are neutralised by food subsidies, there will be a direct loss to the exchequer. **Finally,** any uncompensated fall in the purchasing power of urban and rural workers and poor peasants (and, of course, rise in incomes of surplus-producing agricultural classes) will compress effective demand, facing the non-agricultural sectors with attendant losses of output and government revenues."

In conclusion, it needs to be pointed out that **announcing procurement prices has become one of the primary tools of intervention in agriculture while other crucial issues like fall in capital formation in agriculture, developing irrigation facilities, need for changing land holding patterns, etc., have been ignored.** For example, Raj Krishna (1982) had found that the elasticity of output with respect to major technological shifters such as irrigation was 1.5 to 5.5 times the price elasticity. Maintaining that these elasticities "would in all probability remain higher even if price elasticity were measured to include the effect of price-induced innovations", he concluded that "National Policymakers and international development bankers will therefore do well to devote at least as much attention and effort to the development of technology, infrastructure and human capital as to the price environment." In a similar vein, Dharm Narain (1976) had argued that **"An oversimplistic and, therefore, excessive preoccupation with price can do more harm than good by distracting attention from the harder but more important tasks which belong in the non-price world of achieving technological breakthroughs and releasing such real constraints as stand in the way of their becoming a reality on the farmers' fields."**

2.3.4 SUMMARY

This Chapter examines the trends of agricultural prices since independence. It stresses on the need for stabilization of fluctuation of agricultural prices. Then it highlights the Govt. of India's agricultural price policy. Lastly, it evaluates the agricultural pricing policy of the Government.

2.3.5 SELF ASSESSMENT QUESTIONS

1. Analyse the trends of agricultural price movement since independence.
2. Discuss the government initiatives and measures for stabilization of agricultural prices.
3. Make an assessment of agricultural pricing policy of Govt. of India.
4. Put forth your argument in favour of stabilization of agricultural price fluctuation.

LET US SUM UP

This unit deals with non-farm institutional services in agriculture such as agricultural finance, marketing and pricing policy in India. It focuses on the importance of credit for augmenting agricultural production and described the major sources of both institutional and non-institutional credit. Then the unit describes the scenario regarding marketing of

agricultural products. The unit also highlights the government's agricultural price policy package to assure farmers of minimum or support price and procurement price as an incentive for the farmers to produce more and increase the marketable surplus. It also describes the other set of administered price that the poor are required to pay for the goods they purchased. When the poor are unable to pay high market price for essential goods, the government subsidise the prices of these goods. This imposes a cost on the government exchequer and the government has to have a suitable price policy regarding the public distribution system. At last, the unit examines the working of the public distribution system in India, finds its loopholes and suggests the remedial measures for its smooth operation.

Key Words

- **Input Costs**: The cost of inputs such as seeds, fertilizers, pesticides, machinery, labor, and fuel directly impacts the cost of production for farmers. Changes in input costs can influence farmers' decisions regarding crop choices, acreage, and production levels, which in turn affect market prices.
- **Weather Conditions**: Weather variability, including rainfall patterns, temperature fluctuations, droughts, floods, and other natural calamities, can significantly affect agricultural production levels and, consequently, prices. Poor weather conditions can lead to crop failures or reduced yields, resulting in higher prices.
- **International Market Trends:** Global supply-demand dynamics, international prices, exchange rates, and trade agreements impact agricultural prices in India, especially for commodities that are traded internationally. Fluctuations in global prices can influence domestic prices through trade channels.
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12. Readings in Agriculture-Pramit Choudhury

13. Agricultures in an Unstable Economy-Schultz

14. Agricultural Price and Income Policy- Schultz

15. Marketing of Farm Products-Shepherd

3.1 Chapter

AGRICULTURAL LABOUR PROBLEMS IN INDIA

Objectives

After completing this chapter, you will be able:

- To know about the meaning and importance of agricultural labour
- To understand the growth in the number of agricultural labourers and the causes for this growth
- To study about the conditions and problems of agricultural labourers
- To know about the measures undertaken by the government to improve the condition of agricultural labourers
- To highlight the suggestions to improve the position of agricultural workers

Structure:

3.1.0 INTRODUCTION – DEFINITION OF AGRICULTURAL LABOUR

Unlike industrial labour, agricultural labour is difficult to define. The reason is that unless capitalism develops fully in agriculture, a separate class of workers depending wholly on wages does not come up. Since the capitalist relations are in an underdeveloped state in India, such clear-cut class of agricultural workers has not yet evolved. Difficulties in defining agricultural labour are compounded by the fact that many small and marginal farmers also work partly on the farms of others to supplement their income. To what extent should they (or their family members) be considered agricultural labourers is not easy to answer.

Despite these difficulties, various attempts have been made to define agricultural labour by different experts and committees appointed by the government from time to time. The first Agricultural Labour Enquiry Committee of 1950-51, regarded those people as agricultural workers who were engaged in raising crops on payment of wages. Since in India, a large number of workers do not work against payment of wages all the year round, this definition was incomplete. Accordingly, the Committee laid down that those people should be regarded as agricultural workers who worked for 50 per cent or more days on payment of wages. Therefore, even those people were included under the category of agricultural workers who possessed some land or were rural artisans but who worked 50 per cent or more days on the land of others against payment of wages. The Committee also defined an agricultural labour household. In the opinion of the Committee, if the head of a household or 50 per cent or more of the earners report agricultural labour as their main occupation, that family should be classified as an agricultural labour household. The Second Agricultural Labour Enquiry Committee of 1956-57, took a broad view of agricultural activities to include those workers also who were engaged in allied activities like animal husbandry, dairy, poultry, piggery, etc. The Second Committee submitted that to know whether a household is an agricultural labour household we must examine its main source of income. If 50 per cent or more of its income is derived as wages for work rendered in agriculture, only then it could be classified as agricultural labour household. The changeover from 'work' to 'income' seems more scientific. However, even this is not without flaws. It often happens that the head of the household goes to a city to work in the unorganised sector on a temporary basis or finds job in some public construction programme, whereas other members of his family remain in the village and continue to work in agriculture against payment of wages. Properly speaking, this household should be classified as an agricultural labour household even if it derives a major portion of its income from other occupations in some particular years.

According to the National Labour Commission, a major portion of income of agricultural workers is in the form of wages obtained as a result of working on land. These workers have nothing except their labour to earn livelihood. They are generally unskilled and unorganised. In the Census of India 1961, all those workers were included in the category of agricultural workers who worked on the farms of others and received payment either in money or kind (or both). The 1971 Census excluded those people from agricultural labourers for whom working on the farms of others was a secondary occupation.

This brief analysis is enough to prove that even the experts are not agreed upon the definition of agricultural labour. Accordingly, we must remain content with a working definition. **All those persons who derive a major part of their income as payment for work performed on the farms of others, can be designated as agricultural workers. For a major part of the year they should work on the land of others on wages.**

Categories of Agricultural Labourers

The First Agricultural Labour Enquiry Committee had classified agricultural workers into two categories: (*i*) attached labourers, and (*ii*) casual labourers. In the Indian context, this is the basic classification. Attached labourers are attached to some cultivator household on the basis of a written or oral agreement. Their employment is permanent and regular. Accordingly whenever the master wishes, they are ready to work on his land. Normally, they are not free

to work at any other place. In many instances attached labourers also do the task of domestic servants in addition to working on land. The hours of work are very lengthy and in some cases, attached agricultural labourers have to work from dawn to dusk in the houses and farms of their employers.

All workers not falling in the category of attached labourers, constitute casual workers. They are free to work on the farm of any farmer and payment is generally made to them on a daily basis. There are broadly three types of casual agricultural workers in India: (*i*) small farmers who have very small holdings and are thus forced to work on the farms of others to make both ends meet; (*ii*) tenants who work on leased land but this is not their main source of income (the main source of their income being work performed on the land of others); and (*iii*) sharecroppers who besides sharing the produce of land cultivated by them, also work as labourers.

3.1.1 GROWTH IN THE NUMBER OF AGRICULTURAL WORKERS

The class of agricultural workers did not exist in India before the advent of Britishers. Sir Thomas Munroe had stated in 1842 that there was not a single landless labourer in India. Undoubtedly, this was an overstatement. However, it can be safely said that the class of agricultural workers was too small to attract any attention. According to the Census of 1881, landless labourers in that year were 7.5 million. In 1921, agricultural workers were 21 million which was 17.4 per cent of the total rural working population. The number of agricultural workers has continuously increased since then. They were 27.5 million in 1951 and 31.5 million in 1961. According to the Census of 1971, the number of agricultural workers was 47.1 million which was 26.9 per cent of the total workers. According to the Census of 1981, the number of agricultural workers was 55.4 million which was 25.1 per cent of the total labour force. According to the Census of 1991, the number of agricultural workers was 73.7 million which is 26.5 per cent of the total labour force. **This shows that every fourth person of the labour force is an agricultural worker in India.** The figures for different censuses are not comparable because the definition of agricultural worker has been modified from time to time. However, an unmistaken tendency of a continuously increasing number of agricultural workers is clearly discernible.

3.1.2 CAUSES OF GROWTH OF AGRICULTURAL LABOUR FORCE

There are a number of factors responsible for the continuous and enormous increase in the number of agricultural labourers in India. The more important ones are the following:

1. Increase in population. The population of India has increased at a very rapid pace after 1921. However, development has proceeded at a very slow rate and it has not been possible to provide employment to the increasing population in areas other than agriculture. The technology mix in manufacturing industries, transport and tertiary industries is such that the capital-labour ratio is practically fixed and unchanging. Consequently, it is generally not possible to provide increasing employment opportunities in these sectors. However, situation in the agricultural sector is entirely different. Not only the capital-labour ratio but even the land-labour ratio is variable. Therefore, when population increases, people fall back upon agriculture for their livelihood (in the face of unexpanding employment opportunities in other sectors). Thus, increase in population is one of the major reasons of increase in the number of agricultural labourers.

2. Decline of cottage industries and village handicrafts. There was a rapid decline of cottage industries and village handicrafts during the British period, but modern industries were not set up to take their place. The Britishers had adopted various measures to destroy the traditional industries of India and they were least interested in providing alternative employment opportunities to the skilled and unskilled workers engaged in these industries. Not only were the craftsmen working in such industrial cities as Dacca and Murshidabad rendered jobless, even craftsmen engaged in small towns lost their jobs. These people were forced to seek employment as agricultural workers in the countryside.

3. Eviction of small farmers and tenants from land. In Ryotwari areas in South India, initially land belonged to the farmers. However, with increase in the number of intermediaries, the land started slipping out of the hands of small farmers and they were forced either to adopt the status of tenants or work as agricultural labourers. After Independence, the government adopted various measures of land reforms. However, as discussed in the chapter on 'Land Reforms', under the cover of these reforms, zamindars and big landlords evicted a number of tenants on the pretext of 'personal cultivation'. A majority of these people had no alternative but to seek employment as agricultural workers.

4. Uneconomic holdings. The process of subdivision and fragmentation of holdings (which is mainly a consequence of the law of inheritance and decline of joint family system) has continued unabated for a long period of time. This has rendered a large number of holdings uneconomic. As a consequence, farmers working on these holdings find it difficult to make both ends meet. Therefore, they are forced to work on the farms of zamindars and big landlords as agricultural labourers to supplement their incomes from land.

5. Increase in indebtedness. The increasing indebtedness of small farmers in rural areas is also responsible for increasing the number of agricultural workers. The moneylenders and mahajans often advance loans with the purpose of grabbing the land of small farmers. They adopt various malpractices like charging exorbitant rates of interest, manipulating accounts, etc., and once the small and marginal farmers fall into their trap, it becomes very difficult for them to get out. In an attempt to repay debts, these poor farmers are forced to work as agricultural workers. Often their land is also mortgaged with the moneylenders who sooner or later grab it under the pretext of non-repayment of loans. Thus, the erstwhile farmers are reduced to the status of agricultural labourers.

6. Spread of the use of money and exchange system. The rapid spread of the use of money and development of the exchange system has changed the entire complexion of agriculture. Whereas, previously land was often given to the tenants to cultivate (from whom landlords obtained rent in the form of a portion of the produce), the present practice is to employ agricultural workers to do the job. These workers are paid wages. Thus, workers are now being 'detached' or 'separated' from land and are increasingly assuming the role of wage-labourers.

7. Capitalist agriculture. Because of a multiplicity of factors operating in this country during the last three decades, capitalist agriculture has received a big boost. Abolition of intermediaries, technological development in agriculture, cheap cooperative credit, expansion of marketing facilities and the pricing policy of the government, have all created favourable conditions for the development of capitalist agriculture. More specifically, capitalist agriculture has entrenched itself deeply in Punjab, Haryana and Western Uttar Pradesh. The farmers turned entrepreneurs of these areas have adopted capitalist farming on a large scale and have started attracting agricultural workers from far-off places. The possibility cannot be ruled out that in the future, development of capitalist farming may force more and more tenants to leave land and start working as agricultural labourers.

3.1.3 STATUS AND PROBLEMS OF AGRICULTURAL LABOURERS

The class of agricultural labourers is the most exploited and oppressed class in rural hierarchy. Before Independence, their position was nothing better than that of serfs. They were required to perform all sorts of *begar* on the master's land and house, work as domestic servants from dawn to dusk and do anything and everything that the zamindars demanded of them. They were victims of social discrimination and economic exploitation. If they failed to tow the lines of the master, they were beaten up and tortured. By advancing small loans to them, the zamindars and landlords often succeeded in trapping these poor people in their net and converted them into virtual slaves. This slavery continued from generation to generation and forced the agricultural workers to lead a wretched existence of deprivation and oppression. The situation has improved in the 65 years of Independence. Though even now the class of agricultural

workers is the poorest and resourceless class in rural areas, it is no longer a victim of extreme forms of oppression. But economic exploitation continues. Even now their level of income is very low and highly insufficient to enable them to make both ends meet. Even now their consumption standards are very low. In the absence of alternative sources of employment, they are forced to depend on landlords who consequently dictate terms. The simple law of demand and supply operates. Since their supply is excessive in relation to the demand for them, they have to settle for extremely low wages. The alternative is worse — unemployment.

1. Marginalisation of agricultural workers. The workforce in agriculture (cultivators *plus* agricultural labourers) was 97.2 million in 1951 and this rose to 185.2 million in 1991. As against this, the number of agricultural labourers rose from 27.3 million in 1951 to 74.6 million in 1991. This implies that (*i*) the number of agricultural labourers increased by almost three times over the period 1951 to 1991; and (*ii*) as a proportion of work force in agriculture, agricultural labourers increased from 28 per cent in 1951 to 40 per cent in 1991. **These facts indicate the fast pace of casualisation of workforce in agriculture in India.** Moreover, the share of agriculture and allied activities in GDP at factor cost has consistently declined over the years — from 55.3 per cent in 1950-51 to 37.9 per cent in 1980-81 (at 1999-2000 prices) and further to 14.0 per cent in 2011-12 (at 2004-05 prices). The implication is that the gap per worker GDP in agriculture and that in non-agriculture widened markedly over the post-Independence decades. "The widening gap, considered in the context of casualisation of workforce in agriculture mentioned above, appears to provide a clear indication of the marginalisation process operating in agriculture."

2. Wages and income. Agricultural wages and family incomes of agricultural workers are very low in India. The First Agricultural Labour Enquiry reported that the per capita annual income of agricultural labour families was a meagre ₹ 104 in 1950-51, the average annual income of the household being ₹ 447. The Second Agricultural Labour Enquiry reported a further deterioration in the condition of agricultural workers. Thus, per capita annual income declined to ₹ 99.4 in 1956-57 and average annual income of the agricultural labour households to ₹ 437.

With the advent of the green revolution, money wage rates started increasing. However, as prices also increased considerably, the real wage rates did not increase much. From his study on "Agricultural Wages in India" spanning the period 1970-71 to 1984-85, A.V. Jose concluded that "In fact, stagnation or decline in real wages during the greater part of our period of analysis appears to have been the characteristic feature in a number of Indian States". Increases in output did lead to increase in real wages in some States but "such spurt in real wages has been of a short duration and there is hardly any State which managed to maintain sustained increase in wages over a period of three decades from the mid-1960s onwards." Jeemol Unni's study on "Agricultural Labourers in Rural Labour Households, 1956-57 to 1977-78" also shows that between 1964-65 and 1974-75 daily real wage earnings of adult males actually declined at the all India level and in most of the States (excepting Karnataka, Punjab and Uttar Pradesh).

G. Parthasarathy had estimated the daily money wages in 1984-85 to lie broadly between ₹ 6 and ₹ 11 (excepting Punjab, Haryana and Kerala where they were higher). As against this, the minimum wage required to maintain a basic minimum standard of living was ₹ 22 per day. As is clear, this was considerably higher than the money wages actually prevailing at that time (even in Punjab, Haryana and Kerala). In a nutshell, the living conditions of agricultural labourers are truly pathetic.

In a study on the wage rates of agricultural labour in West Bengal in 1990s, Tushar K. Mahanti pointed out that while the average daily money wage rate more than doubled in 1998-99 over 1990-91 (from ₹ 21.50 to ₹ 49.96), the average daily real wage rate rose by just 13.80 per cent from ₹ 21.50 in 1990-91 to ₹ 24.48 in 1998-99 — an increase of only two rupees and ninetyeight paise in eight years or about thirty seven paise on an average in a year. This is despite the fact that West Bengal had registered a remarkable growth in agricultural production during the period of 1990s (in fact, in eight years, between 1990-91 and 1998-99, aggregate foodgrains production in the State had increased by over 27.5 per cent from 112.70 lakh tonnes to 143.67 lakh tonnes).

In their study on agricultural wages in India (covering the period 1964-65 to 1999-2000), Pallavi Chavan and Rajshree Bedamatta arrive at the following conclusions: *(i)* There was a striking rise in the growth of daily real earnings across all States between 1983 and 1987-88. Between 1987-88 and 1993-94, and further between 1993-94 and 1999-2000, there was a distinct slowdown in the rate of growth of real earnings for both male and female agricultural labourers across a majority of the States; *(ii)* There was a rising trend in the variations in real wages across districts in the 1990s. There was also a rise in the inter-State variations in male and female real earnings between 1987-88 and 1993-94 and then, between 1993-94 and 1999-2000 in contrast to the decline in variation that occurred between 1983 and 1987-88; *(iii)* The differences between the average wages of male and female agricultural labourers have widened over the years (particularly after 1987-88); and *(iv)* While daily wages of agricultural male labourers exceeded the minimum wage levels in most States, the daily wages of female agricultural labourers were below the minimum wage levels in most States. This fact, combined with the rising male-female earnings ratio indicates that gender disparities in wages in the Indian countryside are widening.

In a recently published study, Mukesh Eswaran, Ashok Kotwal, Bharat Ramaswami and Wilima Wadhwa have found that at the all India level, weekly average wages grew by 68 per cent between 1983 and 2004-05. This translates into an annualised rate of growth of 2.5 per cent per year. The average daily earnings grew faster — 74 per cent between 1983 and 2004-05 — or an annualised rate of 3.33 per cent. The rates of growth were higher in the first decade – 1983 to 1993-94 — with annualised rates of 3.3 per cent for weekly earnings and 3.2 per cent for daily earnings. **Both these rates slowed down appreciably in the next decade — 1993 to 2004-05 — to 1.8 per cent and 2.3 per cent per year, respectively. And in the last five years — 1999 to 2004 — these rates slowed down further to 1.1 per cent (weekly earnings) and 0.6 per cent (daily earnings).**

3. Employment and working conditions. The agricultural labourers have to face the problems of unemployment and underemployment. For a substantial part of the year, they have to remain unemployed because there is no work on the farms and alternative sources of employment do not exist. Since they are not organised, they cannot fight for minimum wages either. Though bonded labour has been abolished in the country, yet news about the existence of this system in rural India keep pouring in daily from different parts of the country. According to the NSS (32nd round), there are still about 3.5 lakh bonded labourers in the country. Even where this practice has been totally abolished, there is no provision for fixation of hours of work. At the time of sowing and harvesting, the agricultural workers have to work on the farms from dawn to dusk. Since they are employed on a daily basis, there is no question of any leave or other benefits for them.

4. Indebtedness. Because of the low level of their incomes, agricultural workers have to seek debts off and on. However, because of their extreme poverty, they are not in a position to provide any security. Therefore, institutional agencies are reluctant to provide loans to them. Accordingly, they have to seek credit from non-institutional sources like private moneylenders who charge a high rate of interest and exploit them in a number of other ways as well. In fact, the debt of agricultural labourers passes from generation to generation and is never fully paid up.

5. Feminisation of agricultural labour with low wages. Female agricultural workers are generally forced to work harder and are paid less than their male counterparts. Such bias against female workers exists is most of the dryland areas. At many places, wages paid to female workers are even less than the minimum wages.

6. High incidence of child labour. Incidence of child labour is high in India and the estimated number varies from 17.5 million to 44 million. It is estimated that one- third of the child workers in Asia are in India. The largest number of child workers are in agriculture. Child employment benefits the employer but adversely affects the poor as a class although it may supplement the income of the house-hold supplying child labour. The poor are made worse-off as employment of children brings down the wage levels. Moreover, children employed as workers are deprived of education. As a result, their future potential income remains low.

7. Increase in migrant labour. Green revolution significantly increased remunerative wage employment opportunities in pockets of assured irrigation areas while employment opportunities nearly stagnated in the vast rainfed semi-arid areas. Therefore, there has been a large flow of migrant labour from the latter to the former areas. The number of inter-State distress rural migrant workers is estimated to be around 10 million. Even in areas of abundant labour supply, employers prefer rural migrant workers because of the greater control that can be exercised on such labour without regard to any social responsibility. Sankaran draws a graphic sketch of the miserable plight of inter-State migrant labour in these words: "the time they spend in their own village is aimed at keeping them alive until the next recruiting season, often with the help of advances of money by the recruiting agents and while on migratory work the time is spent on keeping them alive until they return to their village."

8. The landlord-labourer relationship. The relationship between the landlord and the labourer is not uniform throughout the country. There are substantial differences not only among different States but even among different villages of the same State as regards the period of employment, mode and time-period of payment, freedom of movement, bargaining power *vis-a-vis* landlords, begar, etc. Broadly speaking, the relationship between landlords and agricultural labourers is of two types: In the first category are those labourers who are free. Therefore, they can, if they so wish, refuse to work for a particular landlord or zamindar at the prevailing wage rate. They can leave their village and go to some other places for work. In the second category are included those agricultural labourers who work as attached labour. They have to work on the field of their masters and have to accept whatever wages are offered to them. They have been deprived of their freedom in a number of ways. Social customs, oppression and forcible subjugation, burden of indebtedness, etc., have all contributed to strengthen the chains of their serfdom.

3.1.4 MEASURES ADOPTED BY THE GOVERNMENT

Measures adopted by the government to improve the conditions of agricultural labourers can be considered under the following headings:

1. Minimum wages. The Minimum Wages Act was passed as long back as in 1948 and since then the necessity of applying it to agriculture has been constantly felt. However, because of a number of difficulties it was not found possible to fix minimum wages for agricultural labour in most of the States up to 1974. The main difficulties were low productivity of agricultural labour, small size of holdings of many farmers and their consequent incapability of paying more wages, determination of wages by traditional methods and opposition of any changes from the landlords, lack of organisation among rural workers, excessive labour supply in many areas, prevalence of widely different conditions of employment, etc. Some changes have occurred during the planning period. Agricultural production in most of the States has increased. The resulting prosperity of farmers has induced agricultural workers in some places to demand more wages. Moreover, changes accompanying land reforms also increased the aspirations of agricultural labourers. In this changing environment, the government has initiated a number of steps to fix minimum wages for agricultural labourers. At present, excepting Jammu and Kashmir, Nagaland and Sikkim, legislations have been passed in all the States fixing the minimum wages. However, on account of practical difficulties and excessive supply of labour, benefits from these legislations have been very limited. Because of the lack of bargaining power, agricultural workers do not press for minimum wages.

2. Abolition of bonded labour. After Independence, attempts have been made to abolish the evil of bonded labour because it is exploitative, inhuman and violative of all norms of social justice. In the chapter on Fundamental Rights in the Constitution it has been stated that trading in humans and forcing them to do *begar* is prohibited and can invite punishment under law. However, despite this, the practice of bonded labour has continued in the country. It was only in October 1975 that the government issued a notification abolishing this practice. Later on, a legislation was passed known as the Bonded Labour System (Abolition) Act, 1976. Under this Act which extends to the whole country,

the bonded labour system was abolished and every bonded labourer was freed and discharged from any obligation to render bonded labour. Accordingly, all contracts for bonded labour, attachment for recovery of bonded debt, etc., were declared null and void. As a consequence of this Act, 2,82,368 bonded labourers were identified and freed in various parts of the country.

However, even after the passing of the Act complaints of bonded labour are often heard from different parts of the country. Moneylenders and large landowners are often able to force agricultural workers into bonds because of a number of factors. Firstly, many agricultural labourers are not aware of the existence of such an Act. Secondly, because of their extreme poverty and economic compulsions some agricultural labourers voluntarily enter into bonds while in the case of some others, moneylenders taking advantage of the situation compel agricultural workers to enter into bonds.

3. Providing land to landless labourers. The government has distributed land to landless labourers with a view to improving their economic position. The First Plan made a provision of ₹ 1.5 crore for the resettlement of landless labourers on newly reclaimed land as well as culturable wasteland. In September 1957, the National Development Council proposed that lands obtained as a result of enforcing ceiling laws and those donated in Bhoodan and Gramdan should be primarily devoted to the settlement of landless labourers. Priority in the distribution of land is accorded to landless labourers belonging to Scheduled Castes and Scheduled Tribes. Appoximately 70 lakh hectares of land has been distributed among landless labourers so far. However, most of the land made available to these labourers is not fit for cultivation. Though it has satisfied their hunger for land, it has not been able to improve their economic lot.

4. Provision of housing sites. Laws have been passed in several States for providing house sites in villages to agricultural workers. A number of steps were undertaken during the Second Plan to provide house sites free or on a subsidised basis. During Fourth Plan a scheme was introduced under which financial assistance was given to the States for provision of house sites with an area of 91 square metres to cover, where necessary, the cost of acquisition and development of house sites. During the Seventh Plan, the scheme was included in the State sector as a part of Minimum Needs Programme (MNP). This scheme has two components — provision of free House Sites and construction assistance. The scheme was continued in the Eighth Plan also. Specific measures suggested in the Eighth Plan were: (*i*) Construction assistance (subsidy component) should preferably be given in kind; (*ii*) All schemes should have loan and beneficiary contribution to self-help; (*iii*) This programme should be tied with that of building centres so as to promote low-cost housing; and (*iv*) Innovative housing finance system should be set up in rural areas to facilitate supply of credit and mobilise rural savings.

5. Special schemes for providing employment. A number of schemes have been initiated in the planning period for providing employment to rural poor, the important ones being the Rural Works Programme (RWP), Crash Scheme for Rural Employment (CSRE), Employment Guarantee Scheme (EGS) initiated in Maharashtra, Food for Work Programme (FWP), National Rural Employment Programme (NREP) and Rural Landless Employment Guarantee Programme (RLEGP). NREP was launched in the Sixth Five Year Plan. RLEGP was introduced in August 1983 specifically with the object of providing employment to the rural landless. This was a 100 per cent centrally funded programme. NREP and RLEGP were merged to form the Jawahar Rozgar Yojana (JRY) in 1989-90. JRY was in existence till 1998-99. With effect from April 1,1999, JRY was restructured and streamlined and was renamed as Jawahar Gram Samridhi Yojana (JGSY). The objectives of the Yojana were creation of demand-driven village infrastructure including durable assets for increasing the opportunities for sustained employment, and generation of supplementary employment for the unemployed in rural areas. An Employment Assurance Scheme (EAS) was launched on October 2,1993 in 1,772 identified backward blocks situated in drought-prone, desert, tribal and hill areas. EAS was restructured as a single wage employment programme from April 1999 with a fixed annual outlay. The programme covered all the 5,448 rural blocks. The primary objective of the EAS was creation of additional wage employment opportunities during the period of acute shortage of wage employment through manual work for the rural poor living below the poverty line.

The secondary objective was the creation of durable community, social and economic assets to sustain future employment and development. Sampoorna Grameen Rozgar Yojana (SGRY) was launched with effect from September 2001 to provide wage employment in rural areas as also food security, alongwith the creation of durable community, social and economic assets. With effect from April 1, 2002, EAS and JGSY were integrated with SGRY. In November 2004, National Food for Work Programme (NFFWP) was launched in the 150 most backward districts of the country to generate additional supplementary wage employment with food security. SGRY and NFFWP have now been subsumed under the most ambitious wage employment programme 'Mahatma Gandhi National Rural Employment Guarantee Scheme' (MGNREGS) launched in February 2006. MGNREGS aims at providing 100 days of guaranteed unskilled wage employment to each rural household opting for it.

6. Special agencies for development. The Special agencies — Small Farmers Development Agency (SFDA) and Marginal Farmers and Agricultural Labourers Development Agency (MFAL) — were created in 1970-71 with an outlay of ₹ 115 crore (subsequently pruned down to ₹ 103 crore). Under the MFAL scheme, farmers with land holdings below 2.5 acres were defined as marginal farmers and rural households deriving more than 50 per cent of their income from agriculture were designated as agricultural labourers. A total of 41 projects in different districts all over the country were adopted under MFAL in the Fourth Five Year Plan. Some of the important schemes included under the programme were irrigation, land levelling, soil conservation, dairy development, poultry breeding, piggery development, etc. The Fifth Plan abolished the distinction between SFDA and MFAL and merged them into a single programme.

In addition to these agencies, a special programme was initiated for drought prone areas known as the Drought Prone Areas Programme (DPAP) during the Fourth Plan. In addition to other objectives, this programme also sought to provide employment to agricultural workers. Programmes on which such employment was to be made available included irrigation, soil conservation, afforestation, drinking water supply, construction of roads, etc.

7. Other measures. Various other measures adopted by the government from time to time have either directly or indirectly sought to improve the condition of agricultural workers. For example, promotion of small and cottage industries and village handicrafts and development of industrial estates in rural areas have created job opportunities for agricultural workers.

3.1.5 AGRARIAN LABOURER UNREST

A serious crisis has broken out in the field of Indian agriculture. The crisis is most glaringly manifested in the growing incidence of starvation deaths and farmers' suicides. While the largest number of starvation deaths are still routinely reported from the backward regions of the country, especially in Orissa; the trend of suicides generally prompted by heavy indebtedness, crop failure, or inability to find a market for the produce, is noticed even among well-to-do farmers in the agriculturally developed areas of Punjab, Maharashtra and Karnataka.

The crisis has also led to a new phase of agrarian unrest. Peasants and farmers have strongly opposed the WTO, growing penetration of giant agribusiness firms and attempts to corporatise agriculture. Once again powerful farmers' movements are being witnessed in the green revolution areas, Punjab and Haryana in particular. But the original exponent of farmers' movement in the country, Mr. Sharad Joshi, now stands on the wrong side of the fence. This erstwhile World Bank official-turned-farmer leader today advises the NDA government on matters of agricultural policy while the farmers are braving lathis and bullets on the streets.

While the WTO agreements and the thoroughly unequal competition with heavily subsidised big corporate farmers from the western countries have aggravated the present crisis situation, the root of it lies in the accumulated anomalies of the landlord path of capitalist development in Indian agriculture. For the overwhelming majority of poor and lower-

middle peasants, the landlord path pursued in India under the slogan of green revolution has largely reinforced conditions of semi-bondage and extreme hardship. Of course, there were dramatic results initially in the late 1960s and all through the 1970s with foodgrains production recording major increases.

The green revolution thus helped in tiding over an alarming situation of extreme food scarcity and dependence on external aid, and part of the gains of this productivity also percolated to sections of the upper-middle peasantry. But its further spread to relatively backward areas was constrained from the beginning by serious infrastructural problems. With declining public investment in agriculture and rising prices of all key inputs, green revolution soon reached a point of saturation even in its initial strongholds. The farmers' movement in the 1980s with its loud demand for remunerative prices and cheaper inputs reflected this brewing crisis.

Against this backdrop, bourgeois ideologues within the farmers' movement started demanding liberalisation of agricultural trade and reversal of land reforms. Sections of big farmers started dreaming about exporting to the world market and securing super-remunerative prices. This was akin to the corporate clamour for freedom from 'licence-permit-quota raj'. But whether it be the would-be 'Indian' MNCs or the Indian big farmers eyeing their share in the world market, it did not take long for the dream to turn sour. And then just as the corporate sector started demanding a 'level-playing field' even while it was forging closer ties of collaboration with the MNCs, big farmers came up with the demand for insulation from the WTO even as they too were developing a nexus with agribusiness corporations. Just as the working class has to see through the corporate clamour for level-playing fields, so must agricultural labourers, poor peasants and their small farmer allies see through the rich farmers' 'crusade' against the WTO.

The official explanation of the present crisis veers around the hypothesis of overproduction. Instead of expanding the system of public procurement and distribution, the government wants to privatise the foodgrains trade and run a truncated distribution system in the name of better targeting. Farmers unable to sell their crops at the minimum support prices announced by the government are therefore being advised to go in for crop diversification and switch over to cash crops. This indiscriminate diversification is bound to pose a serious threat to food security. Figures of per capita availability of foodgrains already show a stagnating and even declining trend.

The new agricultural policy reflects the official response to the growing crisis of the landlord path of capitalist development. Reversal of land reforms, corporatisation of agriculture, contract farming, crop diversification, expansion of food-processing industry, etc., constitute the main components of this new policy while dismantling of the official procurement and public distribution system and privatisation of agricultural trade constitute the other side of the coin.

Just as a practical consensus has evolved among almost all bourgeois parties, national and regional, over the new economic and industrial policies, with even the CPI(M)-led state governments complying with it, a similar agreement has also begun to crystalise around the new agricultural policy. And if anybody needed further proof of this emerging consensus, it is supplied, once again, by the Left Front government of West Bengal which has commissioned the American consultancy firm Mckinsey to formulate a policy blueprint for what the CPI(M) calls 'consolidation of the Left Front's gains in the field of agriculture'.

Barring small sections of big farmers the current agrarian crisis has adversely affected various sections of the agricultural population. The demand for remunerative prices has now been pushed back to the demand for minimum support price and guranteed procurement, or in other words, freedom from distress sale. Similarly, in the case of agricultural labour, the demand for assured employment has become one of the major demands even as wages often remain depressed way below the officially proclaimed minimum level. But with their relative economic power and much greater political clout, the rural rich, the kulaks and well-to-do farmers always try to transfer the burden of the entire crisis on to the rural poor. It is the latter who are being forced to make the greatest sacrifice and to surrender whatever gains they had achieved through years of struggle.

One look at the picture emerging from Left-ruled West Bengal will indicate the extent of the growing burden of the accumulating agrarian crisis on the rural poor. We are singling out the case of West Bengal precisely because it is one state which boasts of the best record of land reforms and it is in rural Bengal that the longest serving Left-led state government of India is known to be most deeply entrenched. According to a recent status report released by the Land Reforms department of the Government of West Bengal, over 13% pattadars (who had been allotted land under the Land Reforms Act) have been dispossessed and among the recorded sharecroppers 3.02% have been evicted from their barga land. If this is the officially declared trend in Left-ruled West Bengal, the conditions in Congress and BJP-ruled states or for that matter in Laloo Yadav's Bihar and Mayawati's UP are not difficult to imagine.

This changing agrarian scenario has once again sharpened the debate between the reformist and revolutionary agrarian programmes, in practice as well as in theory. The reformist line calls for broad peasant unity which is nothing but a euphemism for abject appeasement and unchallenged domination of the kulak lobby. And the interests and struggles of the rural poor are sacrificed at the altar of this undifferentiated peasant unity. It is to this end that in its updated party programme, the CPI(M) has watered down the land redistribution clause by deleting the provision that land for redistribution would be seized without payment of any compensation.

In practice the CPI(M)-led Kisan Sabha in West Bengal is now in many cases already brokering land deals and that too on behalf of the kulaks. In spite of resolutions to organise agricultural labourers as a class force, in West Bengal the party is still hesitant to make any beginning in this direction. The party's West Bengal State Conference held in February this year confessed that wage struggles of agricultural labourers were being increasingly neglected by most district units of the party and that the wage question was completely at the mercy of market forces.

In sharp contrast to this pro-kulak collaborationist approach, the revolutionary approach takes up the task of mobilising the rural poor and defending their interests. Organising agricultural labour and other rural labour as an independent class force - the rural proletariat - and protecting the specific interests of marginal and small farmers in the face of a deepening agrarian crisis remain, are our highest priorities. Instead of watering down the concept of radical land reforms, we must in practice intensify the struggle for implementation of land reform laws while raising the demand for lowering of the land ceiling so as to make more land available for redistribution. Even in a State like West Bengal, the total area of redistributed ceiling-surplus land amounts to a mere 8% of the total cultivable land in the State.

Our agrarian programme attaches a lot of importance to the issues and demands of the middle peasants and our class line calls for a close alliance with middle peasants. In practice, however, our reach within the middle peasantry remains quite limited. Given the intensity of caste-class divide in many parts of rural India, especialy in states like Bihar and UP, and the rise of kulak-based regional parties, it has been difficult for the party of the proletariat with its strong identification with the rural proletariat to make inroads among the middle peasantry. The present situation of agrarian crisis marks a major opportunity for us to boldly address the issues of the middle peasantry without in any way diluting our primary commitment to the rural proletariat.

It is against this backdrop that we have to review our ongoing agrarian struggles and decide our future course of action. Recent times have witnessed a surge in agrarian struggles not only in our traditional stronghold of Bihar, but also in pockets of UP, Andhra, Orissa, West Bengal, Jharkhand and Punjab. While land, tenancy, wages and employment remain the basic and most common issues of agrarian struggles, we also find many powerful initiatives on issues like privatisation of electricity, increased electricity rates, debt relief, procurement of foodgrains and various aspects of rural development and functioning of the panchayat system.

In Bihar, West Champaran district, which borders Nepal and Uttar Pradesh, has emerged as the latest stormcentre of land struggles. This district still has a very high incidence of well entrenched landlordism. Estates controlling thousands

of acres of land are still quite common. Electoral politics in the district is directly dominated by these large estates and apart from having their own armed henchmen they also enjoy the loyalty of the local police. There is also the case of two MLAs who jointly own one estate (Vilaspur), one MLA elected on a Congress ticket serves as a minister in the Rabri Devi cabinet while the other MLA elected under the banner of the BJP sits in the 'opposition'! The agricultural labourers' association (khet mazdoor sabha) in the district has successfully redistributed 400 acres of land in Gaunaha block among 600 agricultural labourers. In Mainatand block, 300 acres of land belonging to one Markandeya Pandey of UP has been captured. The district administration is trying to suppress these struggles by unleashing barbaric police repression, but the masses are offering determined resistance.

In East Godavari district of Andhra Pradesh, fierce land struggles are going on centring around more than 80 acres of ceiling-surplus and bhudan land in Peddasankarlapudi village located about 50 km away from Kakinada. The landlords, closely aligned with different TDP MLAs in the district have hired the services of a local mafia outfit operating under the banner of a Janshakti faction. In this district more than 3,000 acres of land have been captured and distributed during the last two decades.

In Rayagada district of Orissa, intense land struggle is going on in Padampur and Ramanaguda blocks. In addition to 75 acres of land captured and cultivated since last year, another 60 acres of ceiling surplus land has been rescued from the illegal occupation of landlords well-connected to both the Congress and BJP. On several occasions, hundreds of tribal people have gheraoed the block office, police station and even court and jail. The Party secretary of Rayagada district unit has been booked under several false cases and is currently in jail. Peasant struggle is also gathering momentum in Kalahandi district. Similar at Narayan Patra area of Malkanagin distract of the state 150 acres of land has been captured by the Chase-Muaia Adivsi Sangha under the leadership of Naehika Linga from the hold of non-tribal semifinal bards of village moneylenders,

In North Dinajpur district of West Bengal, poor peasants and agricultural labourers belonging to various SC-ST communities wrested 82 bighas of vested land in Raiganj block from illegal control of local CPI(M) bigwigs. Hundreds of peasants led by party and the peasant association had sucessfully repulsed the CPI(M)'s initial attacks to regain control over the land. Lately, the district administration has unleashed police repression and several activists, including a newly elected member of the Party's West Bengal State Committee have been booked under false cases.

In Uttar Pradesh, land struggle has acquired fresh momentum in Lakhimpur district. More than 100 displaced families of trans-Sharda area have been successfully rehabilitated in 300 acres of fallow land lying with the forest department. The new settlement, known as Kranti Nagar, has always been actively involved in Party-led political struggles and mobilisations. Defending the settlement against constant attacks by the local land mafia-police-criminal nexus remains a major challenge. So far the rehabilitated families have been succesful in retaining their control and beating back the enemy nexus. In the eastern region of UP, the Bairaath farm comprising 1,000 bighas of land illegally held by the 'Raja of Banaras' in Chakia tehshil of the newly created Chandouli district has been the focal point of land struggles. The Raja had however fraudulently managed to secure a stay order from the High Court to prevent the state government from acquiring this land. The struggle initiated by the local CPI(M) unit had also ended in an abject betrayal in 1998 with the CPI(M) reaching a block agreement with the Raja under the mediation of the tehsil administration. Under this agreement, the CPI(M) gave up its claim over half of the land and the remaining half was given personally to a local leader of the party on condition that he would get it cultivated by labourers and deposit 40% of the produce in the government treasury. The party district committee rejected this agreement. There was tremendous resentment among the people against this agreement and, with the balance of social forces gradually tilting in favour, the land in the Raja's possession was captured in 2000-01 under the banner of the Poorvanchal Kisan Sabha. The Party also called upon those cultivating the portion of land under the CPI(M)'s control to stop surrendering 40% crop to the UP Government

and instead insist on getting patta for the land being cultivated. However, failed to consolidate the local Party organisation and in June this year the Raja's henchmen mobilised criminals and their allies and recaptured the land that peasants in the party had taken possession of. They also captured around 100 bighas of land under the CPI(M)'s control, and now their intention is to capture the entire 1000 bighas of the farm. They are preparing the forces for the next round of battle to foil the Raja's game plan.

The Sixth Party Congress had emphasised the task of organising agricultural labourers as an independent class force. In fact, agricultural labourers' struggles and organisations had already started coming up in different pockets of our rural work. However, it was only during the Strengthen the Party Campaign conducted between April and October 2000, that the task was really taken up in a serious way. More than 3,00,000 members were recruited in Bihar during this campaign. State level organisations have since been built in Bihar and West Bengal while district and regional level organisations are functioning in UP, Andhra Pradesh, Tamil Nadu and Chhattisgarh.

In most of areas of work, witnessed spontaneous short-lived and localised struggles of agricultural labourers during busy seasons to clinch a wage hike or secure job guarantees in the face of increased mechanisation. Of late, conscious attempts to organise struggles of agricultural labourers on a whole set of issues ranging from land, wages, employment, and social dignity to housing and other basic amenities of life and various schemes of rural development, have also increased. In Bihar and West Bengal, state-level strike actions preceded by extensive mass awareness campaigns have been organised with a view to popularising basic class demands and raising the level of class-consciousness.

In Bihar, the agricultural labourers' strike held on 22 July was implemented in nearly 2000 villages and demonstrations were held in 134 blocks. Some 70,000 agricultural labourers joined this class action all over the state to demand implementation of the Minimum Wages Act, enactment of welfare legislation at central and state levels, CBI inquiry into the PDS (public distribution system) scam in Bihar and mandatory inclusion of all families with an annual income of less than Rs. 20,000 in the BPL (below poverty line) list. Earlier, a major campaign was conducted in the state on the issue of PDS scam demanding removal of the civil supplies minister and unconditional release of all arrested activists. Block level people's courts were organised in 116 blocks in 20 districts in which nearly 75,000 agricultural labourers and red card holders (those who are legally entitled to subsidised supply of essential provisions but who, in reality, are often denied this while the rich and influential corner all these facilities).

The question of equal wages for men and women is also being taken up in many states. In August 2000, in about 45 villages of Thanjavur and Nagapattinam districts of Tamil Nadu, women agricultural workers led by the Tamizhaga Vivasaya Thozhilar Sangam (Tamil Nadu Agricultural Labourers' Union) struck work for days together to demand the legally stipulated minimum and equal wages. Though the strike succeeded in winning only a partial victory, the message spread far and wide and generated tremendous enthusiasm among women agricultural workers.

Peasant organisations led by the Party have also been quite active in organising peasant resistance against hikes in input prices, mounting debt burden and distress sale of food grains. In Mansa and Bhathinda districts of Punjab, our peasant comrades waged a militant struggle under the banner of Bhartiya Kisan Union (Ekta) on these issues. They fought successfully for cancellation of debts to the tune of millions of rupees and blocked the railways for days to force the Akali Dal government to purchase the crop at an increased minimum support price. In Rajasthan, tens of thousands of farmers marched to the State Assembly in Jaipur to oppose the privatisation of the state electricity board and hike in power tariff. The Rajasthan Kisan Sangathan carried out a sustained and vigorous campaign on this issue. In Pilibhit district of Uttar Pradesh, the Kisan Sabha forced the local administration to open separate purchase centres to procure the crop from small and marginal farmers.

To develop the Party's initiative on the agrarian front and give an all-India thrust to our intervention in the new thrust of peasant movements, the Party reorganised the erstwhile coordination of peasant associations as an All India Kisan Sangharsh Samiti. The AIKSS organised a peasant conference at Faizabad in UP against the new agricultural policy in March 2001. This was followed by a 'lutera bhagao, krishi bachao' ('stop the plunder, save agriculture') campaign in the course of which mass signatures were collected on a 'freedom charter' against the WTO. In September an impressive 'freedom from debt' conference was held at Mansa in Punjab and finally on November 9 an immense anti-WTO rally was held in Delhi to protest the launch of a new trade round at the Doha summit of WTO. This all-India initiative can however only be sustained if peasant associations in different states function properly. Occasional all-India campaigns are no substitute for vibrant local initiatives round the year. Striking a proper balance between national coordination and all-India campaigns and decentralised initiative and local agitations remains crucial for ensuring real all-round growth of our peasant organisations.

Now that we have launched a separate organisation for agricultural labourers, we are faced with the challenge of maintaining the separate identity of both agricultural labour and peasant organisations and yet combining the initiatives of the two organisations to raise the level of the overall movement. We should gradually move towards building an all-India organisation for agricultural labourers. With growing inter-state migration and the rise of common class demands including that of a comprehensive central legislation, elements of class-consciousness are growing among agricultural labourers and an all-India organisation with periodic national campaigns can accelerate and consolidate this process. In some areas where our work is concentrated primarily among either agricultural labourers or middle peasants, it is not necessary to rush immediately to form two separate organisations. In real life, agricultural labour and poor peasants are often indistinguishable and so a certain degree of overlapping between the agricultural labour organisation and the peasant association may be unavoidable. Any attempt to make a hard and fast distinction is liable to create a mechanical division and inhibit our overall initiative. Agricultural labour organisations may also be registered as trade unions and affiliated to our central trade union organisation. But this must be understood as a purely technical arrangement, agricultural labour organisations must not be confined to any narrow framework of trade union legalities or trade union mode of functioning.

The Agrarian Programme adopted in the Party's Third Congress (1982) and the Policy Resolutions on Agrarian Question adopted in the Varanasi Congress (1997) have already clarified the Party's position on the essential question of developing the proletarian agrarian strategy in opposition to the bourgeois strategy of reformed landlordism. Many issues may come to the foreground in the course of the movement and every issue that concerns the broad masses of agricultural labour, poor and middle peasantry is a legitimate issue of our peasant movement. Of course, we must learn to relate specific issues to the overall agrarian programme and take a dynamic view of the developing situation. Just as the ongoing reversal of old government policies relating to agriculture in the present context of market liberalisation do not amount to a negation of the essential strategy of landlord path of capitalist development, we must also develop our response to the changing agrarian scene on the basis of our agrarian programme.

Periodic investigation and systematic study of the situation is central to a Marxist understanding of agrarian relations. And in the absence of a solid Marxist approach, things will be left to spontaneity and our response will remain ad-hoc and empiricist. In this regard, we need to lay special emphasis on a Marxist study of the agrarian conditions in Bihar and Uttar Pradesh, because the dominant discourse in this region is obsessed with caste, crime and communal violence to the utter neglect of the underlying agrarian reality. In the academic arena too, peasant studies have gone out of fashion. If the spotlight of official research is at all focused on the rural poor, it is either in the framework of devolution and decentralisation of power as opposed to any radical social and political transformation, or as obscure cultural identities that apparently 'celebrate' economic exploitation or social oppression as a different lifestyle.

A complaint is often heard these days that many people who have benefited from land struggles are becoming passive. Their involvement in various struggles and political mobilisations is on the wane. In some cases, we even come across situations where some people have developed unhealthy vested interests and creating factional divisions among the masses on the question of control over land and other resources the people have won through bitter struggles and great sacrifices. Such a negative turn in the situation is generally sought to be rationalised by referring to the change in the class position of these persons.

This is just a case of barking up the wrong tree. A landless peasant gaining a plot of land may at best turn into a poor or lower-middle peasant but that by no means automatically renders him passive, corrodes his class outlook and weakens his spirit as an activist. This passivity is nothing but an expression of economism which in turn breeds all kinds of bureaucratic or anarchist distortions. Just as a 'pure' economic struggle or the general framework of trade union movement can never break the barriers of bourgeois consciousness, no amount of militant land struggle can, on its own, guarantee a durable revolutionary consciousness or spirit. The gains of any economic struggle are bound to turn counter-productive after a point unless such gains are politically consolidated under the conscious leadership of the Party. Winning and enforcing the people's right to basic natural resources like land, water and forest is a fundamental question of people's democracy. We must not allow any laxity in matters of formulation and enforcement of proper policies of land redistribution and collective democratic management of all resources under the Party's close guidance.

Our experience shows that agrarian struggles everywhere are confronted with systematic state repression and organised feudal-kulak violence. In the concrete conditions of Bihar where the caste-class division is very rigid and feudal remnants are particularly stubborn, this feudal-kulak violence often takes the shape of private armies perpetrating brutal massacres. In contrast to the liberal viewpoint that tries to explain away this phenomenon as nothing but caste war, we must grasp the underlying content of intense class antagonism that displays features of fascist violence. A private army like the Ranvir Sena, for example, stands out not only for its much larger scale of operation compared to other groups of henchmen and hirelings but also for its strong anti-poor, anti-communist ideological content and intricate political-operational nexus with the state.

The pattern of violence becomes further complicated with the entry of militant anarchist outfits. In areas where the revolutionary movement is not strong, the anarchists appear to be operating 'independently' against the state and powerful local interests, but since they are devoid of any political perspective and any vision of real proletarian independence, they invariably end up serving the political interests of the ruling classes. In almost all our major areas of struggle, we are faced with a serious anarchist nuisance. Operating at the behest of bourgeois parties and often in tandem with private armies and criminal gangs, anarchist outfits are bent upon disrupting the movement by killing our leaders and activists and even large-scale massacres of our supporters.

Combating and defeating this violence is an all important agenda of agrarian struggles. There is no doubt that this violence is intended to crush and derail the agrarian struggles and trap us in a war of attrition. But it is also equally true that we cannot wish it away and we cannot imagine a smooth and peaceful development of agrarian struggles. In the Varanasi Congress we had rightly emphasised the twin tasks of delivering a decisive blow to the private armies and criminal gangs that are trying to block the progress of our peasant movement and keeping up the momentum of the movement even in situations where the entire local organisation is preoccupied with the agenda of resisting the enemy's violence. We must stick to the policy of developing mass resistance as an integral part of agrarian struggles so as to deliver a decisive and comprehensive blow to the perpetrators of feudal-kulak violence.

The present juncture of acute agrarian crisis makes this challenge all the more critical. The self-styled champions of the beleaguered peasantry who have all along accused us of pitting agricultural labour against peasants are getting increasingly exposed. The social support of the private armies has started thinning out. The growing internal crisis of

the Ranvir Sena, which led to the recent surrender of the infamous Sena chief, has to be seen in this context. We must strike while the iron is hot. A renewed all-out emphasis on agrarian struggles in all its dimensions is the need of the hour.

3.1.6 CAUSES OF LABOURER UNREST

Causes of labour unrest in agriculture are varied depending on characteristics of an area; social, economic and cultural background; a history of notworking out solutions to lingering structural problems; and ineffective application of ameliorative steps undertaken since Independence and more so since the mid-sixties of the last century. Therefore the causes are complex in nature. The intensity of unrest resulting in extremist methods and effort to resolve issues through violent means as a challenge to state authority is in response to the gathering of unresolved social and economic issues for long durations.

(A) Land-related Factors

1. The origin of the popular slogan "land to the tiller" is in absentee landlordism, where the landlord would merely take the lion's share of the produce without contributing anything to the production of the crop. It was in this context that the freedom fighters demanded that the one who tills the land must own it, and the post independence government was committed to it. Absentee landlords do exist even today, but today's land relations are much more complex. So though the aspiration of "land to the tiller" continues to be given, the focus of the agricultural labour movement in the form of Naxalite movement is on trying to provide land, whether the land of landlords or government land, to the land less. In occupying landlords' land, the Naxalites have not taken law as their reference point. It is not the ceiling-surplus land of the landlords that they have sought to put in the possession of the landless. Rather, they have targeted landholders whose holding is sizeable as they see it, or who are otherwise oppressive or cruel in their conduct, or hostile towards the Naxalite movement, even if they are not big landlords. Such landholders have in many cases been driven away from the villages and their land sought to be put in the possession of the landless poor.
2. The agrarian labourers in their movement in the garb of Naxalites seem to have had greater success with Government lands. Though no precise estimates are available, it is a fact that in some cases the Naxalite movement has succeeded in helping the landless to occupy a substantial extent of government land whether for homesteads or for cultivation. In Bihar all the Naxalite parties have attempted to assist, in their respective areas of influence, the landless Musahars, the lowest among the dalits, to take possession of a sizable extent of such land. But the poor remain without title to the land because the administration again feels that giving them title or even a conditional assignment (in which the assignee can use the land and pass it on to the heirs but cannot sell the land) would sanctify law-breaking and strengthen the Naxalites. Such qualms appear reasonable only if they are divorced from the reality that the Government has the power to distribute such land to the poor, but has failed to do so. To defuse social tension government may regularise these occupations if the occupiers are otherwise eligible.
3. In the case of forest land, occupation by the adivasis with the encouragement and assistance of the Naxalites, has taken place on an extensive scale in Andhra Pradesh, Chhattisgarh, the Vidarbha region of Maharashtra, Orissa and Jharkhand. In fact much of it is not fresh occupation but reassertion of traditional usufructory rights declared by the law to be illegal. Properly conducted forest settlement proceedings should have protected at least the pre-existing rights, but much of forest settlement proceedings has taken place behind the back and over the head of the adivasi forest dwellers.

4. The Government's statistics show that 39% of what is called forest encroachment in the whole country has taken place in the above region. Much of it, as said above, is not encroachment but occupation that far predates forest reservation and forest laws. Prior to 1980, the various State Governments would off and on acknowledge this fact by regularising the occupation, thereby giving back what has been unilaterally taken away. But the Forest Conservation Act, 1980, put an end to such regularisation, and put the forest dwellers perpetually on the brink of eviction from their own habitat. This enabled the naxalites to step into the vacuum to espouse the popular cause and secure popular support. The fear of naxalite armed resistance deterred the repressive and depredatory moves of the authorities.

(B) Displacement and Forced Evictions

1. Internal displacement caused by irrigation/mining/industrial projects, resulting in landlessness and hunger, is a major cause of distress among the poor, especially the adivasis. It is well known that 40% of all the people displaced by dams in the last sixty years are forest-dwelling adivasis. Other forms of distress have added to this unconscionable figure. The law and administration provides no succour to displaced people, and in fact often treats them with hostility since such internally displaced forest-dwellers tend to settle down again in some forest region, which is prohibited by the law. The Naxalite movement has come to the aid of such victims of enforced migration in the teeth of the law.
2. But displacement caused by major projects is not the only cause of migration. Landlessness, extremes of poverty and social oppression can also be causes of displacement. Landless adivasis mainly of the Muria or Gothi Koya tribe of Chhattisgarh have long been crossing over into the forests of Khammam district of Andhra Pradesh in search of land, with the support of the Naxalites. Again, both the forest and police departments came down heavily on them and set their hamlets on fire in incident after incident from 1989 till about 2002. But due to the interventions of civil society bodies the immigrants have stood their ground and today their presence is informally accepted by the administration. The same Act of 2007 can come to their rescue but Muria is not a recognised Scheduled tribe in A.P., and the issue whether its other name, Gothi Koya, is the same as the Kottu Koya found in the A.P list of Scheduled tribes is as yet unresolved.
3. In many places local inhabitants formed resistance groups when the Naxalites severely interfered with their traditional life style. However, these resistance groups were converted into vigilante groups sponsored by the authorities over a period of time. In Chhattisgarh, the group is called Salwa Judum. Some members of this group are appointed as Special Police Officers (SPOs). Some of them are given arms training and are provided with fire arms. Often these vigilante groups fight with armed naxalite groups making the tribals fight the tribal. As a principle of good governance such a situation is not desirable. These vigilante groups, inhabitants of tribal villages, who had moved out are put in camps along with some arterial roads. Such migrants have left behind their agricultural land, some of their livestock and other means of production and livelihood. Most of them do not like their camp life which has discipline and constraints.
4. In the process of forced migration, many tribals have left their villages and even State and migrated into neighbouring States. This involuntary displacement and migration has caused further distress among the tribals and created administrative problems for the host State. In the State of Bihar, through social oppression, many dalits had to move from their traditional habitat and moved elsewhere. They were victims of upper caste atrocities. New habitats of such migrant dalits have become a source of further social tension. It is, therefore, time to think about a comprehensive policy frame in which such internal displacement of different groups of population, whether tribal or dalit, does not take place and in case it happens there should be a government policy to take care of such a situation. Through this process of forced migration large mineral areas got vacated

where the mining corporate lessees are starting operation. Often the displaced persons look on hopelessly and sometimes they seek support of the naxalite groups. Such situations create space for naxalite interventions.

5. In Bihar there have been many instances where dalits suffering social oppression, and in recent times victims of the massacres perpetrated by the caste senas such as Ranvir Sena, have had to flee their hamlets and settle elsewhere. Indeed, prevention of the depredations of the caste Senas is the state's duty in the first instance. It has failed not only in that but also in providing protection to the victims so that they are not forced to migrate, or at least shelter and livelihood at the places where they have migrated to. The victims have received that help from the Naxalites. The trauma of displacement for which the state does not provide succour creates space for violent movement.
6. Considering the widespread phenomenon of internal displacement in the country, it is time the Government devised a policy to provide minimal security to such displaced populations. Their immediate problems are shelter and livelihood. In the absence of any policy in this regard, they are prey to all manner of exploitation. The Muria (Gothi Koya) immigrants from Chhattisgarh have, in their desperation, been a source of extremely cheap labour in building construction and civil works of all kinds in the parts of A.P that they have migrated to.

(C) Livelihood

1. The Minimum Wages Act remains an act on paper in much of rural India. Agricultural labour is governed by the Act but the minimum wage rates under the Act are not implemented, except where the prosperity of the farmers and the demand for labour makes it unavoidable. In the areas of their activity, it is reported that Naxalites have ensured payment of decent wage rates, though they have not usually gone by the statutory minimum wage rates. The rates they have ensured are sometimes higher and sometimes lower than the statutory rate. Their orientation to rights is in general not governed by statutory entitlement but what they regard as just and fair, taking all factors that they believe to be relevant into consideration.
2. There are also large areas of labour not governed by the Minimum Wages Act. This includes categories where there is no discernible employer, which is for this reason included in the category of self-employment. Since the Naxalites are in any case not bothered whether or not there is a law governing the right they are espousing, they have intervened and determined fair wage rates in their perception in all labour processes in their areas of influence. This includes wages for washing clothes, making pots, tending cattle, repairing implements, etc. Naxalites have secured increases in the rate of payment for the picking of tendu leaf which is used for rolling beedies, in the forest areas of Andhra Pradesh, Chhattisgarh, Orissa, Maharashtra, and Jharkhand. This was a very major source of exploitation of adivasi labour, and while the Government knowingly ignored it, the Naxalites put an effective end to it. The exploitation was so severe that the rates have over the years increased up to fifty times what the tendu patta contractors used to pay before the Naxalites stepped in.

(D) Social Oppression

The fight against the social oppression that the dalits and the lower among the OBCs have been regularly subjected to is perhaps the most significant among the issues used by the Naxalite movement. Besides taking up and resolving individual issues, the movement has given confidence to the oppressed to assert their equality and demand respect and dignity from the dominant castes and classes. Impolite forms of address that the dalits were subjected to, and the prohibition in the matter of wearing clean clothes and footwear in the presence of upper castes, or while passing through their localities, and the compulsion to address them as dora or malik and other such oppressive practices, have by and large been brought to an end in their areas of work. The everyday humiliation and sexual exploitation of laboring women of dalit communities by upper caste men is another form of oppression that has been successfully fought. Forced labour (begari and vetti chakri) by which the toiling castes had to provide their caste obligations free to the upper castes was also put an end to in many parts of the country, especially the Telangana districts of Andhra Pradesh.

Suggestions for Remedial Measures

- The High Level Committee constituted by the Planning Commission to review the National Mineral Policy (2007), has made several far reaching recommendations on simplification and streamlining of the procedures for granting mineral leases with a view to provide an impetus to mineral development. The Government has considered these recommendations and, by and large, adopted them. Considering that mineral resources are largely located in the predominantly tribal tracts in the country, it is important that mineral exploration and development activity is carried out in such a way that (i) it is consistent with and non-intrusive of the rights and privileges conferred on the tribals under the Fifth Schedule and (ii) it causes least disturbance to the ecology that surrounds the tribal habitats. In this regard, it is necessary to keep in view the guidelines laid down by the Hon'ble Supreme Court in the Samata case (referred earlier). The local tribal communities, through their Gram Sabhas, should be fully involved in any decision taken on mining in the first instance. Even if mining were to be taken up in exceptional cases, as already referred to, the Constitutional rights of the tribals in regard to ownership of the land and its resources should be fully protected.
- However, this occupation has remained a major bone of contention between the adivasis and the State. While the forest department is inhibited by the threat of the Naxalites or the Naxalite-supported militancy of the adivasis, the police see in the affected areas a 'Naxalite' in many a tribal and subject them to considerable harassment. A feeble attempt at providing a right of regularisation of at least pre-1980, occupation was made by the Union government in 1990, following the recommendations of the 29th report of the Commissioner for SCs and STs, but that remedy remained on paper because the proof of occupation the claimant had to produce was onerous, and in any case no effort was made to educate the likely beneficiaries about the policy. But now with the enactment of Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2007 (Act 2 of 2007), it should be possible to resolve the issue by giving formal recognition to such rights. One can envisage some difficulties such as proof of occupation as on 13 Dec 2005, and if they are not dealt with imaginatively, the imaginatively drafted law may not deliver all that it promises. But it still holds a promise of a better deal for such forest dwellers.
- Apart from the concrete issues undertaken by the Naxalites against social oppression, the fact that the cadre and also most of local leaders of the Naxalite organisations consist of poor villagers of castes looked upon as lowly has endowed the oppressed with much strength. A sense of powerlessness is a characteristic of the psychological makeup of oppressed classes. The typical Naxalite cadre, however, is a confident (most probably gun-wielding) teenager from those very classes. To see young boys and girls of their own villages and their own class/caste active in the Naxalite movement, and wielding power over the 'big' men of the village and the high and mighty tahsildar has given a sense of empowerment to the oppressed that has inestimable value. This indeed was one of the benefits that the Panchayat Raj system was expected to give the oppressed communities, but with the empowerment of the local bodies as envisaged by the 73rd Amendment to the Constitution remaining a mere promise in most States, and with the cooptation of the leaders generated by the Panchayat institutions in the corrupt political system, the hope has been largely belied. A very genuine empowerment of the local bodies and of the representatives of the oppressed communities within the system alone can fill this need.
- 'Begar', or forced labour in all its forms is also prohibited by the Constitution in Article 23. The Bonded Labour System (Abolition) Act was enacted in the year 1976, to give concrete form to this prohibition. The Act is, however, concerned only with debt bondage and not all forms of forced labour. There is no law penalising forced labour in other forms. Therefore it flourished in the most medieval forms in the Telangana district in Karimnagar, and it took a major upsurge led by the Naxalites in the late seventies and early eighties of the last century to put an end to it.

- Positive enactments for penalizing discrimination have been legislated in the case of the Scheduled castes and Scheduled tribes. The SC & ST (Prevention of Atrocities) Act, 1989, is not merely a penal law. It envisages the setting up of an elaborate system for prevention of such atrocities. The law has, however, been seen as merely a penal law which the victims have to set in motion. Its full potential has not been actualised by the administration. Instead much time is spent discussing its misuse.
- This is an area where the duty of the State is laid down unambiguously by the Constitution. The task of putting an end to social discrimination should not have required the threat of Naxalite-inspired militancy. Discrimination on grounds of caste, sex, religion, etc., is barred by the Constitution in Articles 14 to 17.

3.1.7 AGRICULTURAL EMPLOYMENT SITUATION IN INDIA

According to the NSS, Current Daily Status rural unemployment rate for male workers was 4.58 per cent in 1987-88. Since then unemployment among rural male workers has increased. **The Current Daily Status unemployment rate for the rural male workers had risen to 8.0 per cent in 2004-05 as against 7.2 per cent in 1999-2000 and 5.6 per cent in 1993-94. The CDS unemployment rate for rural workers was 6.8 per cent in 2009-10.** Most of this unemployment is agricultural unemployment which may be classified into: (*i*) seasonal unemployment, (*ii*) disguised unemployment, and (*iii*) chronic and usual status unemployment.

Seasonal Unemployment

Seasonal unemployment in agriculture is a normal condition in India. In 2008-09, gross irrigated area as a percentage of gross cropped area was only 45.3 per cent. However, two or more crops are prepared on not more than 25 per cent cultivable land. This implies that farmers cultivating approximately 75 per cent of the land remain involuntarily unemployed for 3 to 4 months, unless they find some temporary employment in this period. Since the percentage of the lucky ones who manage to get some work in the off-season is quite low, the incidence of seasonal unemployment in the agricultural sector is obviously very high.

Agricultural labourers in India rarely have work throughout the year. According to the Second Agricultural Labour Enquiry Committee, agricultural labour in this country had 237 days employment in 1956-57. In other words, on an average their unemployment was approximately for 3 to 4 months. The Planning Commission in its *Mid-term Appraisal of the Fourth Plan* had pointed out that leaving aside the green revolution belt, in all other areas seasonal unemployment during the early 1970s, was at least as much as during the 1950s, if not more. However, considering the decline in employment elasticity, measured as the ratio of employment growth to the growth of value added, in the agricultural sector during the 1980s and 1990s, there is every reason to believe that the seasonal unemployment should have increased in recent years. The employment elasticity in agriculture was estimated to be 0.87 during 1983 to 1987-88. It declined to 0.01 during 1993-94 to 1999-2000.

Disguised Unemployment

The Indian agriculture is characterised by the existence of considerable amount of surplus labour. However, no firm estimates of its size are available. From the fragmentary information that is presently available it appears that in the green revolution belt there is no disguised unemployment. For the past four decades, the demand for wage labour has increased in these areas and agricultural labourers have been brought from other parts of the country to meet it. In all other regions, pressure of growing population has been increasing on land and when one notices too many people operating tiny agricultural holdings, one feels inclined to believe that disguised unemployment still exists in these areas on a considerable scale. However, it would be wrong to jump to some hasty conclusion on the basis of mere impressions. Let us, therefore, turn to the works of those who have undertaken micro-level studies of surplus labourers, and see if

they can help us in arriving at some conclusion. The most well known work in this area is that of Shakuntala Mehra. Some other prominent experts who have attempted to measure surplus labour in agriculture are J.P. Bhattacharjee and Ashok Rudra. Shakuntala Mehra's study attempts to provide estimates of disguised unemployment for the country as a whole. Making some highly questionable assumptions (such as that there is no surplus labour on the largest farms) she concluded that 17.1 per cent of the work force in agriculture was surplus during the 1960s. Her study further revealed that the removable surplus labour was considerably more in certain States than in some other States. J.P. Bhattacharjee and Ashok Rudra had carried out their studies on parallel lines. Both of them differ in their approach from Shakuntala Mehra as they do not purport to extend beyond the sample observations (selected villages in West Bengal and Bihar) on which the exercises were carried out. Notwithstanding the differences in their approach, all the studies referred to above convincingly refute the no-surplus-labour hypothesis.

Usual Status Unemployment

Usual Status Unemployment in rural areas cannot be clearly distinguished from seasonal and disguised unemployment. It is this reason why people remaining unemployed for long periods are sometimes counted as seasonally or disguisedly unemployed. This error crops up particularly if the survey is carried out in the off-season when most people in villages do not have any productive work with them. Information on Usual Status Unemployment rate is presented.

3.1.8 CAUSES OF AGRICULTURAL UNEMPLOYMENT

The foregoing analysis of unemployment in India has made it evidently clear that most of the unemployment in this country is structural. Its main causes are discussed below:

1. Jobless growth. During the first three decades of economic planning, the GDP growth rate was as low as 3.5 per cent per annum. In this period, employment increased at a reasonable rate of 2 per cent per annum. However, thereafter, while the GDP growth rate picked up considerably, employment growth rate registered a sharp fall. In fact, while employment growth was as high as 2.82 per cent per annum over the five year period 1972-73 to 1977-78, it fell to only 1.02 per cent per annum over the five year period 1993-94 to 1999-2000. As argued by Papola, this is due to the reason that because of the large weightage of agriculture in total employment (which is as high as 60 per cent), a low rate of growth in agricultural employment pulls down the overall employment growth as well. While the rate of growth in agricultural employment was as high as 2.32 per cent per annum during the five year period 1972-78, it was only 0.06 per cent per annum during the period 1993-94 to 1999- 2000. Slowdown in employment is also due to the fact that employment elasticity declined steeply from 0.68 during 1983 to 1987-88 to just 0.16 during 1993-94 to 1999-2000. Employment elasticity in agriculture fell still more steeply from 0.87 to a negligible 0.01 over the period. Thus, the country witnessed a phenomenon of jobless growth in the period of 1990s. The rate of growth of employment picked up considerably to 2.90 per cent per annum during the five year period 1999-2000 to 2004-05 but again declined to almost zero per cent over the next five years 2004-05 to 2009-10. Thus, the country could create only one million jobs during 2004-05 to 2009-10. This is despite the fact that in three years in this period (2005-06, 2006-07 and 2007-08) the rate of growth of GDP exceeded 9 per cent per annum. This shows that in recent period again, we have witnessed a phenomenon of jobless growth.

2. Increase in labour force. Since Independence, death rate has rapidly declined and the country has entered the second stage of demographic transition. The rate of population growth rose to 2.2 per cent per annum during the 1960s, and, as a consequence, rate of increase in labour force also rose to 1.9 per cent per annum. During the period 1983 to 1993-94, both demographic and social factors have further raised the rate of growth of labour force. Thereafter,

there has been a decline in the rate of growth of labour force. In India, demographic factor has operated in a direct manner. Over the years mortality rate has declined rapidly without a corresponding fall in birth rate and the country has thus registered an unprecedented population growth. This was naturally followed by an equally large expansion in labour force. In Indian context, social factors affecting the labour supply are as much important as demographic factors. Since Independence, education among women has changed their attitude towards employment. Many of them now compete with men for jobs in the labour market. The economy has, however, failed to respond to these challenges and the net result is continuous increase in unemployment backlog. In rural areas, whereas on account of growing labour force, unemployment has increased mainly in disguised form, in urban areas it is open and visible.

3. Inappropriate technology. In India, while capital is a scarce factor, labour is available in abundant quantity. Under these circumstances, if market forces operate freely and efficiently, the country would have labour-intensive techniques of production. However, not only in industries, but also in agriculture, producers are increasingly substituting capital for labour. In the Western countries, where capital is in abundant supply, use of automatic machines and other sophisticated equipment is both rational and justified while in India, on account of abundance of labour, this policy results in large unemployment.

According to W.A. Lewis, in all those countries where unskilled labour is available in excess supply, great care is needed in exercising choice in respect of techniques because monetary wage fails to reflect the real cost of labour. When labour is in excess supply at prevailing monetary rates of return, capital would not be considered productive, if it does the same work which labour also does with an equal amount of efficiency. Lewis asserts that investment in such a situation in capital equipment may be profitable to individual capitalists, but it is certainly not beneficial to the society, because it increases unemployment and not production.

4. Inappropriate educational system. The educational system in India is defective. It is, in fact, the same educational system which Macaulay had introduced in this country during the colonial period. According to Gunnar Myrdal, India's educational policy does not aim at development of human resources. It merely produces clerks and lower cadre executives for the government and private concerns. With the expansion in the number of institutions which impart this kind of education, increase in unemployment is inevitable. It is so because education in arts, commerce and science will not ensure employment on account of its limited utility for productive purposes. Myrdal considers all those who receive merely this kind of education not only as inadequately educated but also wrongly educated. Myrdal's criticism of India's educational system is valid. If the problem of unemployment is to be solved in this country, radical changes will have to be made in the educational system. Any educational system which fails to develop human resources properly will not be able to provide employment to all those who have received it and, accordingly, would need drastic changes.

3.1.9 GOVERNMENT POLICY FOR REMOVING UNEMPLOYMENT

Employment Policy upto the 1980s

Unemployment was recognised as a problem from the very beginning of the planning process in India. Accordingly, employment generation was accepted as a goal of development planning. However, **a faster growth with special emphasis on employment-intensive sectors like the small-scale industry was considered adequate to generate employment of the order required to take care of the problem.** For example, the Second Five Year Plan (1957-62) estimated a backlog of unemployment at 5 million and an annual addition of labour force at 1.5-2 million. It envisaged a rate of growth of 5 per cent per annum which was expected to generate employment opportunities for all of them over a period of 10 years. **"Employment thus was treated as a goal of development, though not central, much**

less overarching. At the same time, it was also not treated purely as a 'residual'; some efforts were made to see that it remains an essential element of the development strategy." Similar treatment of employment continued in the Third and Fourth Plans. However, achievements relating to growth of employment fell short of expectations. GDP growth rate averaged 3.5 per cent per annum, employment growth 2 per cent per annum, whereas labour force increased at a faster rate of 2.5 per cent per annum. As a result, the number of unemployed increased from about 5 million in 1956 to 10 million in 1973-74. This forced the planners to rethink their approach. To tackle the problem of increasing unemployment and persisting poverty (which was affecting almost one-half of India's population), **the Fifth Five Year Plan (1974-79) envisaged a reorientation of development strategy towards an employment-oriented growth and introduction of special anti-poverty and employment programmes.**

The Planning Commission acknowledged in the Sixth Plan document the hard reality that despite economic planning, employment opportunities had not adequately increased over the years. The position was not satisfactory even in terms of long-term employment. Keeping in view these facts **the employment policy under the Sixth Plan (1980-85) aimed at "the two major goals of reducing underemployment for the majority of labour force and cutting down on long-term unemployment". Obviously, for a lasting solution to these problems, employment-oriented rapid economic growth was necessary. Hence, efforts in this direction were combined with short-term measures which provided some relief at least on temporary basis.**

Since in our mixed capitalist economy private and cooperative sectors coexist with the public sector, the government committed itself to a policy of employment generation in all the sectors. It was admitted that production in the public sector is highly capital intensive and thus there was not much scope for creation of fresh employment in this sector. Therefore, **the government decided to concentrate particularly on policy measures seeking to influence the private demand and utilisation of manpower in the private sector. This required emphasis on self-employment ventures in agriculture, cottage and small industries and allied activities as well as non-farm operations.** Some of the major employment programmes thus undertaken were the Integrated Rural Development Programme (IRDP), the National Rural Employment Programme (NREP), the National Scheme of Training Rural Youth for Self-Employment (TRYSEM), the Operation Flood II Dairy Project and other dairy development schemes and Fish Farmers Development Agencies.

During the late 1970s and 1980s having recognised the fact that in Indian conditions the percolation effects of growth were not sufficient to generate the required employment opportunities, the need for supplemental employment programmes for specific target groups/areas was felt and as stated above under the Fifth and the Sixth Plans attempts were made in this direction. However, the magnitude of the unemployment problem continued to increase. Accordingly, the Seventh Five Year Plan (1985-90) for the first time sought to place employment at the centre of development strategy. The Planning Commission stated, **"The central element in the development strategy of the Seventh Plan is the generation of productive employment."** The Seventh Plan like some other earlier plans assigned a key role to the agricultural sector for employment generation. However, the agricultural sector cannot eliminate the entire unemployment backlog and also absorb additions to the labour force. Therefore, programmes of rural development, particularly those of rural capital formation in the form of construction were undertaken. The planners were clear that even the realisation of a high rate of industrial growth could not absorb more than a fraction of unemployed and underemployed labour force in the organised industrial sector.

According to the Planning Commission, employment generation does not necessarily imply creating wage employment. Under the Seventh Plan, there was considerable emphasis on creation of conditions for additional self-employment. Therefore, apart from sectoral programmes, **the package of poverty alleviation programmes aimed at giving self-employment and wage employment to the poorer sections of the community** like NREP (National

Rural Employment Programmes), RLEGP (Rural Landless Employment Guarantee Programme) and IRDP (Integrated Rural Development Programme) were continued. However, despite these efforts at providing employment, unemployment contained to increase and, as stated earlier, stood at 23 million as on April 1, 1992.

Employment Strategy During Post-Reform Period

It is often righly argued that a high rate of economic growth is a necessary, but not a sufficient condition to solve the unemployment problem in India. In India, where employment elasticity is quite low, an annual growth rate of 8-9 per cent can provide only a partial solution to the unemployment problem. Raj Krishna had shown that on the assumption that population and productivity would continue to grow at the existing rates, the most comprehensive Daily Status unemployment could be eliminated in the next two decades if the long-term growth rate could rise to 6.5 per cent. When Raj Krishna did his exercise, employment elasticity for all sectors was around 0.68. Since then employment elasticity has declined. It has been estimated to be 0.16 for 1993-94 to 1999-2000. This implies that for generating additional employment at 3 per cent per annum, GDP should register an annual growth of 18-19 per cent which is something impossible in the given structure of the Indian economy. **Therefore, in India, economic growth by itself can never solve the unemployment problem and the government policy which gives overriding priority to economic growth would add to unemployment backlog rather than reducing it.** Therefore, under the Eighth Plan (1992-97) there was emphasis on both the growth of the economy and restructuring of output composition of growth. **The Plan set a target of 2.6-2.8 per cent annual growth in employment with a view to achieving 'a near full employment situation' in a period of 10 years (i.e., by 2002).** To achieve the target, the Plan advocated readjusting the sectoral composition of output in favour of sectors and sub-sectors having higher employment elasticity. It also advocated spatial and sub-sectoral diversification of agriculture, wasteland development, improving employment opportunities in the rural non-farm sector, promoting small and decentralised industrial sector, and faster growth of informal and service sectors. It also advocated changes in labour market policies.

The Ninth Five Year Plan (1997-2002) emphasised the need for providing productive work as it is a basic source of human dignity and self-respect. It is also an integral part in nurturing national identity and social cohesion. It also acknowledged the fact that in a labour-surplus economy like India, market forces alone cannot be relied upon to provide gainful work to all. Public intervention is necessary to ensure not only that adequate work opportunities are created, but also that the labour force is able to access these opportunities. As far as generating greater productive work opportunities is concerned, the plan emphasised **"concentrating on sectors, sub-sectors and technologies which are more labour-intensive, in regions characterised by higher rates of unemployment and underemployment."** However, as noted by Papola, in spite of pronouncing employment as a major dimension of State policy in the beginning, the Ninth Plan treated it as a ***residual*** resulting from growth rate and pattern determined by other factors and constraints rather than the consideration of employment generation. Moreover, the plan projected growth of employment opportunities to be similar to that in the labour force, leaving the backlog of unemployment unchanged.

Despite the efforts at employment generation, the problem became more serious during the 1990s. The assumption that a higher growth rate will result in faster employment growth did not materialise. This would be clear from the fact that **while GDP growth rate increased from 5.2 per cent during 1983-1993/94 to 6.7 per cent from 1993/94 to 1999/2000, the rate of employment growth actually declined from 2.7 per cent to 1.07 per cent per annum over the period.** Employment elasticity of GDP growth correspondingly declined from 0.52 to 0.16 over the period. The backlog of unemployment at the start of Tenth Plan (2002-07) was estimated at 35 million. The addition to the labour force in this Plan was estimated at 36 million. The Plan argued that achievement of the targeted rate of growth of 8 per cent per annum would add 30 million person-years of employment while the policies advocated for employment

generation in different sectors of the economy (particularly in agriculture and allied activities, small and medium enterprises, broad-based rural non-farm activities and some of the social service sectors like education and health) and appropriate policy changes for faster development of sectors of high labour intensity like construction, tourism, communication and information technology, and financial services would enable the addition of another 19.32 million person-years of employment. Thus, roughly 50 million person years of employment was planned to be generated over the Tenth Plan period which would bring down the backlog of unemployment from around 35 million at the beginning of the Tenth Plan to roughly 21 million at the end of the Tenth Plan.

The Eleventh Five Year Plan (2007-12) aimed at creating 58 million job opportunities — about 17 million in trade, hotel and restaurant sector and about 12 million each in industry and construction (no increase in employment was projected in the agricultural sector). The Plan advocated an employment strategy that could ensure rapid growth of employment and improvement in the quality of employment. The Plan argued that, "While self employment will remain an important employment category in the foreseeable future — it accounted for 58 per cent of all employment in 2004-05 — there is need to increase the share of regular employees in total employment… It should be the focus of policy to achieve a substantial increase in the share of regular employment with a matching reduction in the share of casual employment which at present is as high as 23 per cent." However, the Plan has failed miserably in meeting the target of generating 58 million job opportunities. According to 66th Round of NSSO, only 18 million job opportunities could be created over the period 2004-05 to 2009-10 on CDS basis. As stated earlier, on UPSS basis, only one million job opportunities could be created.

Most of the observers agree that the post-economic reform period in India has witnessed the phenomenon of **jobless growth.** The largest sector of the economy, agriculture, has witnessed lacklustre growth. The government's response in this context has been to aim at raising rural incomes through poverty alleviation programmes. However, the delivery of these programmes has not been satisfactory as there have been numerous 'leakages' due to corruption. The jobless from rural areas have been entering the 'informal' sector. It absorbs 93 per cent of the workforce and is characterised by unprotected jobs without regular salaries and engulfs a vast population of self-employed people and daily-wage workers. These workers also migrate to big cities and end up in slums in sub-human conditions.

3.1.10 MAJOR EMPLOYMENT PROGRAMMES

Swaranjayanti Gram Swarozgar Yojana (SGSY)/NRLM was launched from April 1, 1999 after restructuring the IRDP and allied schemes. It is the only self-employment programme for the rural poor. The objective is to bring the self employed above the poverty line by providing them income generating assets through bank credit and government subsidy. Upto September 11, 2011, 42.05 lakh self-help groups (SHGs) have been formed and 168.46 lakh swarojgaries have been assisted with a total outlay of ₹ 42,168 crore. The SGSY has now been restructured as the National Rural Livelihoods Mission (NRLM). The NRLM aims at reducing poverty by enabling poor households to access gainful self-employment and skilled wage employment opportunities.

The Swarana Jayanti Shahari Rozgar Yojana (SJSRY) came into operation from December 1, 1997, subsuming the earlier urban poverty alleviation programmes, *viz.,* Nehru Rozgar Yojana, Prime Minister's Integrated Urban Poverty Eradication Programme and Urban Basic Services Programme. The programme was revamped with effect from April 1, 2009. The scheme provides gainful employment to the urban unemployed and underemployed poor, by encouraging the setting up of self-employment ventures by the urban poor and also by providing wage employment and utilising their labour for construction of socially and economically useful public assets. The revamped SJSRY has five components: (i) the Urban Self-Employment Programme, (ii) the Urban Women Self-Help Programme, (iii) Skill Training for Employment Promotion among Urban Poor, (iv) the Urban Wage Employment Programme, and (v) the Urban Community Development Network. A total of 3,63,794 beneficiaries have been assisted in the year 2011-12.

Prime Minister's Rozgar Yojana (PMRY) was designed to provide self-employment to more than a million educated unemployed youth by setting up of seven lakh micro-enterprises under the Eighth Five Year Plan. During the Eighth Plan, while loans in 7.70 lakh cases were sanctioned, the actual disbursement of loans was in 5.76 lakh cases. The scheme was continued in the Ninth Five Year Plan. In the first three years of the Ninth Plan, loans were disbursed in 5.0 lakh cases which provided employment to 7.4 lakh persons.

The National Rural Employment Programme (NREP) was started as part of the Sixth Plan and was continued under the Seventh Plan. On April 1, 1989, it was merged into the Jawahar Rozgar Yojana. The NREP was meant to help that segment of rural population which largely depends on wage employment and has virtually no source of income during the lean agricultural period. Under the NREP development projects and target group oriented employment generation projects were closely intertwined. The programme was implemented as a centrally-sponsored scheme. But its financial burden was to be shared between the Central government and the State governments on 50:50 basis. Under the scheme a district level employment plan (disaggregated block-wise) was prepared.

The Rural Landless Employment Guarantee Programme (RLEGP) was started on 15th August, 1983, with the objective of expanding employment opportunities for the rural landless. The programme aimed at providing guarantee of employment to at least one member of the landless household for about 100 days in a year. Under this scheme, infrastructural development was undertaken with a view to create employment opportunities for the rural landless. Though the programme was to be fully financed by the Central government, the implementation of the programme was entrusted to the States.

The Integrated Rural Development Programme (IRDP) launched in 1978-79 and extended all over the country in 1980-81, was essentially conceived as an anti-poverty programme under the Sixth Five Year Plan. It, however, through a programme of asset endowment also meant to provide self-employment in a variety of activities like sericulture, animal husbandry and land-based activities in the primary sector; weaving, handicrafts, etc., in the secondary sector; and service and business activities in the tertiary sector. Under the Sixth Plan the IRDP aimed at covering 15 million families in all the blocks of the country. Thus, on an average, about 3,000 families in a block were expected to receive assistance under this programme. The assets provided to these households were financed through a mix of government subsidy and institutional credit on an average subsidy-credit ratio of 1:2. Under the IRDP, 382 million families were assisted. However, the exact amount of employment generated has not been estimated.

The Scheme of Training Rural Youth for Self-employment (TRYSEM) was initiated in 1979 with the objective of tackling unemployment problem among the rural youth. It aimed at training about 2 lakh rural youths every year to enable them to become self-employed. Under this scheme 40 youths were to be selected from each block and for being eligible for selection, the person was required to belong to a rural family having an income less than ₹ 3,500 per year. In making selection, members of scheduled castes and scheduled tribes were given preference. Under the scheme, a minimum of one third of the rural youths trained were to be women. The TRYSEM was merged into Swarnajayanti Gram Swarozgar Yojana in April 1999.

Jawahar Rozgar Yojana (JRY). In February 1989, the government announced a new wage employment scheme, the Jawahar Lal Nehru Rozgar Yojana for intensive employment creation in 120 backward districts. However, later on it was felt that there was no need to have the separate NREP, RLEGP and the Jawahar Lal Nehru Rozgar Yojana. These wage employment programmes had the same objective and similar thrust. Therefore, these programmes were merged into a single rural employment programme on April 1, 1989 and it was given the name **Jawahar Rozgar Yojana (JRY).**

The JRY completed eleven years in March 1999. The JRY was restructured with effect from April 1999 and was renamed as **Jawahar Gram Samridhi Yojana (JGSY).** In the first ten years the JRY generated 7,373 million mandays

of employment. Thus, in quantitative terms, the performance of the JRY was not distinctly better than that of the NREP and RLEGP. However, in two respects the JRY was superior to the NREP/RLEGP regime. First, under the JRY there was a clear change in the priorities in favour of economically productive investments, especially which enhance the productivity of land. Second, the JRY approach involving panchayats in planning and implementation of employment schemes was superior to the bureaucratic approach followed under the NREP/RLEGP.

The objective of JGSY was creation of infrastructure and durable assets at the village level so as to increase opportunities for sustained employment to the rural poor. The wage employment under JGSY was provided normally to persons belonging to households below poverty line. There was no sectoral earmarking of resources under JGSY. However, 22.5 per cent of annual allocation had to be spent on schemes for the benefit of Scheduled Castes/Scheduled Tribes and 3 per cent of annual allocation was to be utilised for creation of barrier free infrastructure for the disabled.

The Employment Assurance Scheme (EAS). The EAS aimed at providing 100 days of unskilled manual work on demand to two members of a rural family in the age group of 18 to 60 years in the agricultural lean season within the blocks covered under the scheme. The EAS was universalised so as to make it applicable to all the rural blocks of the country. During 1996-97 to 1999-2000, a total of 1,533.7 million man-days employment was generated under the scheme.

3.1.11 SUMMARY

This unit deals with the problems of agricultural labourers in India. It explains the causes of growth of agricultural labour force and their status since independence. Then, the unit brings out agrarian labour unrest and explains their root causes. It also gives a detailed picture of agricultural employment situation in India. Then it identifies the causes of unemployment and highlights the remedial measures undertaken by the government to remove such unemployment. At last, it delineates the measure employment programmes introduced by the government.

3.1.12 SELF ASSESSMENT QUESTIONS

1. Account for the growth of agricultural labour force in India.
2. Briefly illustrate and delineate the basic problems of agricultural labourers in India.
3. Explain the root causes of agrarian labour unrest in India.
4. Give a picture of agricultural employment situation in India.
5. Evaluate the major employment programmes undertaken by the government for the development of agricultural labourers and rural economy.

LET US SUM UP

This unit describes the importance of agricultural labourer in India. It examines the problems and status of agricultural labourers and higlights the measures undertaken by the government to improve the condition of agricultural labourers. Thereafter, the unit brings to light, the serious agrarian crisis and labour unrest in India. It brings out the recent incidents of agrarian unrest and the struggle of peasants of agricultural labourers across the states of India. In the end, the unit explains the root causes of agrarian unrest and suggests some policy measures to overcome the agrarian crisis for a healthy agrarian relation and agricultural development.

Key Words

- **Seasonal Unemployment:** Agriculture in India is largely seasonal, leading to unemployment or underemployment during off-seasons. This results in income instability for agricultural laborers.
- **Gender Disparities:** Women constitute a significant portion of agricultural laborers in India but often face discrimination in terms of wages, access to resources, and land ownership rights.
- **Lack of Social Security:** Many agricultural laborers lack access to social security benefits such as health insurance, retirement plans, and unemployment benefits. This leaves them vulnerable to economic shocks and crises.
- **Land fragmentation**: Land fragmentation refers to the division of agricultural land into smaller and smaller parcels over successive generations. This phenomenon is prevalent in many parts of the world, including India, and can have several negative impacts on agricultural productivity, rural economies, and the livelihoods of farmers.
- **Income Inequality**: Income inequality refers to the unequal distribution of income among individuals or households within a society.

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8. Agricultural Credit-Belshaw

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10. Readings in Agricultural Development (Ed.)-Khurgo

11. Agriculture in Economic Development (Ed.)-Eicher and Witt

12. Readings in Agriculture-Pramit Choudhury

13. Agricultures in an Unstable Economy-Schultz

14. Agricultural Price and Income Policy- Schultz

15. Marketing of Farm Products-Shepherd

4.1 Chapter

POLICY TOWARDS AGRICULTURE AND RURAL DEVELOPMENT IN INDIA AND WTO

Objectives

After completing this chapter, you will be able:

- To know about the state policies towards agricultural and rural development
- To highlight the trends of investment in agriculture.
- To know about the National agricultural policy
- To know about WTO and its impact on Indian agriculture
- To understand agricultural growth concern

Structure:

4.1.0 INTRODUCTION

Agriculture sector is the main stay of the Indian economy. It is the key indicator for the progress of our country. Agriculture occupies a key position in our economy because of its contribution to overall economic growth through supplies of food cereals, raw materials and exports. It is a source of livelihood for two thirds of our population and provides a large market for non-agricultural goods and services. It has remained one of the important thrust area in the various Five Years Plans designed by India's Planning Commission. Agriculture including allied activities accounted for 13.9 per cent of G.D.P., at 2004-05, prices in 2011-12 as compared to 14.7 per cent in 2009-10. Notwithstanding the declining trend in agriculture 's share in G.D.P.,it is critical from the employment generation as it accounted for about 58 per cent employment in the country according to 2001 census report. As data available it is absorbing about 52 per cent of the total national workforce in 2004-05, as against 70 per cent in 1970-71. The importance of agriculture in a country like India is not likely to decline due to concerns for food security, employment, rural poverty and availability of wage goods. Successive Five Year Plans have stressed on self-sufficiency and self-reliance in foodgrain production and concerted efforts in the direction have resulted in substantial increase in agricultural production and productivity.

This is clear from the fact that from the level of about 52 million tonnes in 1951-52, foodgrain production of the country rose to a record level of 244.78 million tonnes in 2010-11. In the age of globalization, some competitive steps have to be undertaken to project India's agriculture in the international agriculture scenario and the W.T.O. is a roaring platform to witness all these. Accordingly, the State policy towards agriculture and rural development has to be revamped from time to time.

4.1.1 STATE POLICIES FOR AGRICULTURAL AND RURAL DEVELOPMENT

The First and Second Plans placed great emphasis on expanding irrigation facilities by developing major and medium irrigation projects. Programmes for reorganisation of agrarian relations and rural development like land reforms programme and community development programme were also taken up on a nation-wide basis. Community Development Programme was a comprehensive programme of rural development touching all aspects of rural life. Agricultural growth was just a part of this programme: other aspects included rural literacy, health and sanitation, improvement in communications, rural housing, rural industry, animal husbandry, etc. Stress was also laid on co-operative farming. This emphasis on major and medium irrigation projects, Community Development and co-operation continued almost till the end of the Third Plan. In 1965-66 and 1966-67 the country faced serious drought conditions and some 19 million tonnes of foodgrains had to be imported to avert starvation. This called for a re-examination of the agricultural strategy pursued thus far and initiation of steps to increase agricultural production and productivity. Thus, **from institutional reforms, the focus of agricultural policy shifted to technology.** The New Agricultural Strategy (NAS) was introduced in selected (better endowed and high-productivity) regions of the country in a bid to push up agricultural production. The focus now shifted to minor irrigation from major and medium irrigation; provision of credit and other agricultural inputs to farmers at subsidised rates to encourage their widespread usage; guarantee of remunerative prices to farmers to ensure that the incentive to produce more remains; better agricultural marketing facilities, etc. The entire emphasis was now on increasing the 'marketed surplus' of foodgrains. Side by side, a massive food security system was built up in the form of public distribution system to ensure availability of foodgrains to the consumers at reasonable prices. Rural employment programmes were also introduced for poverty alleviation. In conjunction with the public distribution system, these rural employment programmes were expected to provide a **'safety net'** to the rural poor.

Important policy measures introduced in the rural sector in India during the period of planning are as follows:

1. Technological measures. Initiation of measures to increase agricultural production substantially to meet the growing needs of the population and also to provide a base for industrial development included steps to increase both extensive cultivation and intensive cultivation. For the former, irrigation facilities were provided to a large area on an increasing basis and area hitherto unfit for cultivation was made fit for cultivation. For the latter, **new agricultural strategy was introduced in the form of a package programme in selected regions of the country in 1966.** To sustain and extend this programme to larger and larger areas of the country, steps were initiated to increase the production of high-yielding varieties of seeds, fertilisers and pesticides within the economy and supplement domestic production by imports whenever necessary. As a result of these measures, agricultural production and productivity increased substantially. Foodgrains production which was merely 50.8 million tonnes in 1950-51 rose to the record level of 252.6 million tonnes in 2011-12 (according to Third Advance Estimates released on April 23, 2012). Largest contribution came from wheat. Its production rose from 6.5 million tonnes in 1950-51 to 90.2 million tonnes in 2011-12.

2. Land reforms. Land reform measures to abolish intermediary interests in land (*viz.,* zamindars, jagirdars, etc.) and transfer of land to actual tiller of the soil were expected to be taken up on a priority basis. Measures taken under this head included: (i) Abolition of intermediaries; (ii) Tenancy reforms to (a) regulate rents paid by tenants to landlords, (b) provide security of tenure to tenants, and (c) confer ownership rights on tenants; and (iii) Imposition of ceilings on

holdings in a bid to procure land for distribution among landless labourers and marginal farmers. These land reform measures were designed to eliminate the parasitic class of zamindars and absentee landlords and abolish all types of exploitation of the tenants at the hands of these people. Thus, the attempt was aimed at changing the entire agrarian structure of the rural areas.

3. Cooperation and consolidation of holdings. In a bid to reorganise agriculture and prevent subdivision and fragmentation of holdings, the Indian agricultural policy introduced the programmes of cooperation and consolidation of holdings. The latter programme aimed at consolidating all plots of land owned by a particular farmer in different places of the village by sanctioning him land at one place equal in area (or value) to his plots of land. Consolidation avoids wastage of time, land and energy employed in cultivation and also enables farmers to practise scientific techniques of production. Cooperation aims at bringing small and marginal farmers together to reap the benefits of large-scale farming. Under cooperative farming, small and marginal farmers pool their land and resources (or only resources) and practise joint cultivation.

4. Institutions involving people's participation in planning. Bringing small and marginal farmers together to cultivate jointly is only half of the story. No planning in any country can be successful unless the masses are encouraged to join hands with the planning authorities in a bid to carry-out the plans and programmes framed for their uplift and betterment. It was precisely with this end in view that the programme of Community Development was initiated in 1952, in this country. It was aimed to be a project of the people, by the people and for the people, wherein the role of the government and administrative authorities was defined as 'to help the people to help themselves'. The experience of the Community Development programme reads a sad story. It could never become the people's programme and remained tied to the umbilical cord of government assistance. Another programme designed to encourage the participation of masses in the planning process (and political decision-making) was the programme of democratic decentralisation, often known as Panchayati Raj. Its experience was no different from Community Development. In fact, it proved to be worse. It conferred powers (howsoever limited) on local dadas and influential political elements to exploit masses to their advantage and indulge in all sorts of political bickerings and corrupt practices.

5. Institutional credit. Another important measure initiated was the expansion of institutional credit to farmers, especially through cooperatives and commercial banks. After nationalisation of banks in 1969, nationalised banks have paid increasing attention to the needs of agriculture. Regional Rural Banks were also set up to deal specially with the needs of agricultural credit. A National Bank for Agriculture and Rural Development (NABARD) was also set up. As a result of the expansion of institutional credit facilities to farmers, the importance of moneylenders has declined steeply and so has the exploitation of farmers at the hands of moneylenders.

6. Procurement and support prices. Another policy measure of significant importance is the announcement of procurement and support prices to ensure fair returns to the farmers so that even in years of surplus the prices do not tumble down and farmers do not suffer losses. This is necessary to ensure that farmers are not 'penalised' for producing more. In fact, the policy of the Commission for Agricultural Costs and Prices in recent years has been to announce fairly high prices in a bid to provide incentive to the farmers to expand production.

7. Input subsidies to agriculture. The government has provided massive subsidies to farmers on agricultural inputs like irrigation, fertilisers and power. The objective of input subsidisation is to increase agricultural production and productivity by encouraging the use of modern inputs in agriculture. Under the government policy, various inputs to the farmers are supplied at prices which are below the level that would have prevailed in the open market. The prices of these inputs, therefore, do not reflect their true value, i.e., the real cost of supplying these inputs. However, over a period of time, strong farmer lobbies and vested interests build up which makes the withdrawal of some of these subsidies impossible even after their economic rationale ceases to exist. In fact, the subsidies show a tendency to increase

continuously. Many economists have argued in recent years that agricultural subsidies in India have reached 'fiscally unsustainable' level.

8. Food security system. In a bid to provide foodgrains and other essential goods to consumers at cheap and subsidised rates, the Government of India has built up an elaborate food security system in the form of Public Distribution System (PDS) during the planning period. PDS not only ensures availability of foodgrains at cheap prices to the consumers but also operates as a 'safety net' by maintaining large stocks of foodgrains in order to combat any shortages and shortfalls that might occur in some years and/or in certain areas of the country.

9. Rural employment programmes. PDS alone cannot serve as an effective safety net. This is due to the reason that unless the poor have adequate purchasing power they cannot buy their requirements from the PDS. Therefore, large-scale poverty alleviation programmes in the form of rural employment programmes are required to provide purchasing power to the poor. On account of this reason, the government introduced various poverty alleviation programmes particularly from Fourth Plan onwards like Small Farmers Development Agency (SFDA), Marginal Farmers and Agricultural Labour Development Agency (MFAL), National Rural Employment Programme (NREP), Rural Landless Employment Guarantee Programme (RLEGP), Jawahar Rojgar Yojana (JRY), Jawahar Gram Samridhi Yojana (JGSY), Sampoorna Grameen Rozgar Yojana (SGRY), National Food for Work Programme (NFFWP), Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), etc. Taken together and implemented efficiently, PDS and rural employment programmes can work as effective safety net for the poor.

10. Rashtriya Krishi Vikas Yojana (RKVY). The RKVY was launched in 2007-08 with an outlay of ₹ 25,000 crore in the Eleventh Plan for incentivising States to enhance public investment to achieve 4 per cent growth rate in agriculture and allied sectors during the Eleventh Five Year Plan period. The RKVY format permits taking up national priorities as sub-schemes, allowing the States flexibility in project selection and implementation. The sub-schemes include: Bringing Green Revolution to Eastern India (BGREI); Integrated Development of 60,000 pulses villages in Rainifed Areas; Promotion of Oil Palm; Initiative on Vegetable Clusters; Nutri-cereals; National Mission for Protein Supplements; Accelerated Fodder Development Programme; and Saffron Mission. The RKVY links 50 per cent of Central assistance to those States that have stepped up percentage of State Plan expenditure on agriculture and allied sectors. RKVY is a State Plan scheme administered by Union Ministry of Agriculture, over and above its existing Centrally sponsored and Central Sector Schemes. Funds under the scheme are provided to the States as 100 per cent grant. The Finance Minister while presenting the Union Budget for 2012-13 claimed that the initiative of BGREI had resulted in a significant increase in production and productivity of paddy. States in eastern India have reported additional paddy production of 7 million tonnes in kharif 2011. Accordingly, the Finance Minister increased the allocation for this scheme from ₹ 400 crore in 2011-12 to ₹ 1,000 crore in 2012-13. For the RKVY as a whole, the resource allocation has been increased from ₹ 7,860 crore in 2011-12 to ₹ 9,217 crore in 2012-13.

11. National Food Security Mission (NFSM). The NFSM is a crop development scheme of the Government of India that aims at restoring soil health and achieving additional production of 10, 8 and 2 million tonnes of rice, wheat and pulses, respectively by the end of 2011-12. It was launched in August 2007 with an approved outlay of ₹ 4,883 crore for the period 2007-08 to 2011-12. A sum of about ₹ 3,381 crore had been spent up to March 31, 2011.

The Mission has focussed on the Districts with productivity of wheat/rice below the State average. The total area targeted is about 20 and 15 million hectares for rice and wheat respectively. On the other hand, Districts with potential for area expansion and productivity enhancement have been covered under pulses. The Mission is under implementation in 480 Districts of 18 States, *viz.,* comprising of 142 Districts for rice in 15 States; 142 Districts for wheat in 9 States and 468 Districts for pulses in 16 States. The Mission interventions consist of a judicious mix of proven technological components covering seeds of improved variety, soil ameliorants, plant nutrients, farm machines/implements, and plant

protection measures. In addition, a special initiative under the name of the Accelerated Pulses Production Programme was initiated in 2010 to boost the production of pulses by active promotion of technologies in 1,000 clusters of 1,000 hectares each. The government has claimed that considerable achievements have been recorded under NFSM during the course of implementation of the programme such as new farm practices, distribution of seeds of high yielding varieties of rice, wheat, pulses, and hybrid rice, and treating area with soil ameliorants to restore soil fertility for higher productivity. Moreover, through targeted interventions, the Mission has already achieved, a year in advance, 25 million tonnes of additional production of foodgrains exceeding the target of 20 million tonnes of production set for the terminal year 2011-12, of the Eleventh Five Year Plan.

12. Macro Management of Agriculture. Macro Management of Agriculture (MMA) is one of the Centrally sponsored schemes formulated in 2000-01, with the objective to ensure that Central assistance is spent through focused and specific interventions for development of agriculture in States. To begin with, the scheme initially consisted of 27 Centrally sponsored schemes relating to Cooperative Crop Production Programmes (for rice, wheat, coarse cereals, jute, sugarcane), Watershed Development Programme (National Watershed Development Project for Rainfed Areas, River Valley Projects/Flood Prone Rivers), Horticulture, Fertiliser, Mechanisation and Seed Production Programmes. With the launching of National Horticulture Mission (NHM) in 2005-06, 10 schemes pertaining to horticulture development were taken out of purview of this scheme.

In the year 2008-09, Macro Management of Agriculture Scheme was revised to improve its efficacy in supplementing/complementing efforts of States towards enhancement of agricultural production and productivity. Role of the scheme has been redefined to avoid overlapping and duplication of efforts and to make it more relevant to the present agricultural scenario in States to achieve basic objectives of food security and to improve the livelihood system for rural masses. Revised MMA scheme comprises 10 sub-schemes relating to crop production and natural resource management. The revised MMA scheme has formula-based allocation criteria and provides assistance in the form of grants: loan to the States/Union Territories on 90:10 basis, except in case of the North-eastern States where the Central share is 100 per cent grant. Total outlay for MMA in the Eleventh Plan is ₹ 5,500 crore.

13. Other Measures. In addition to the measures mentioned above, the Indian agricultural policy contained a number of other elements, some of which are outlined below:

(i) Provision and extension of irrigation facilities through major and medium irrigation projects and of power for minor irrigation through the programme of rural electrification.

(ii) Improving the system of agricultural marketing through the establishment of regulated markets and introducing a variety of measures like standardisation of weights and measures, grading and standardisation of farm output, providing information regarding market prices to farmers, etc. Efforts have also been made to strengthen the cooperative marketing structure.

(iii) Provision and expansion of storage and warehousing facilities to enable the government to build up adequate buffer stocks to cope with the food problem in years of shortage of foodgrains, and save the farmers from indulging in 'distress' sales during surplus years.

(iv) Initiation of steps to improve the economic condition of agricultural workers. In this category come measures to enforce minimum wages, abolition of bonded labour, grant of agricultural land to landless labourers, schemes for expanding rural employment, etc.

(v) Promotion of agricultural research and training to discover new high-yielding varieties of seeds, avoid wastage of grains in storage, successfully counter the attacks of pests, insects and rodents, develop techniques for increasing productivity of soil, and ensure optimum utilisation of soil, water and sunlight resources. The triple

function of agricultural research, education and extension is being implemented through the various research institutes, agricultural universities, project directorates, etc. At the apex stands the Indian Council of Agricultural Research (ICAR).

(vi) In an effort to extend green revolution to the Eastern Region of the country and develop dryland areas, the Seventh Five Year Plan introduced two specific programmes: (a) Special Rice Production Programme, and (b) National Watershed Development Programme for Rainfed Agriculture. The former was initiated by the government in the Eastern Region (comprising of Assam, Bihar, Orissa and West Bengal, eastern Uttar Pradesh and eastern Madhya Pradesh). The latter, introduced in 1986-87, lays emphasis on land and water management through introduction of optimal cropping system, dryland horticulture, farm forestry, fodder production, etc. Since Green Revolution which was confined to irrigated areas is showing signs of fatigue, the focus is now increasingly shifting to rainfed areas.

(vii) To increase the production of oilseeds to reduce imports and achieve self-sufficiency in edible oils, the Technology Mission on oilseeds was launched by the Central government in 1986. Subsequently, pulses, oil palm and maize were brought within purview of the Mission in 1990-91, 1992 and 1995-96, respectively.

(viii) In order to provide flexibility to the States in implementation based on regionally differentiated approach, to promote crop diversification and to provide focused approach to the programmes, the schemes of Oilseeds Production Programme, Oil Palm Development, National Pulses Development Project and Accelerate Maize Development Programme of Ninth Plan were merged into one Centrally Sponsored Integrated Scheme of Oilseeds, Pulses, Oil Palm and Maize (ISOPOM) during the Tenth Five Year Plan which is being implemented with effect from April 1, 2004. The scheme has been implemented in 14 major oilseeds and pulses growing States, 15 States for maize, and 9 for oil palm. The pulses component has been merged with the NFSM with effect from April 1, 2010.

(ix) The Small Farmers' Agri-Business Consortium (SFAC) was set up in January 1994, to generate agri-business activities with the theme objective of securing expanding employment opportunities and raising income levels in the rural areas through effective support to various types of agri-business.

(x) In recent years, a number of policy changes have been introduced to make agricultural exports more viable. Most of the restrictions on agricultural exports have been removed. Export Oriented Units (EOUs) in the floriculture sector are being set up and import of capital goods, plant and machinery for establishing food processing units has been made more liberal.

(xi) National Horticulture Mission (NHM) was launched during the year 2005-06, with the objective of providing holistic growth to the horticulture sector through an area-based, regionally differentiated strategy, supply of quality planting material, production and productivity improvement, technology promotion, extension, post harvest management and marketing. At present 372 Districts in 18 States and Union Territories have been covered under the NHM. It is now recognised that since the horticulture sector includes a wide range of crops, such as fruits, vegetables, roots and tuber crops, flowers, spices, plantation crops, etc., it facilitates the diversification of agriculture. It also improves livelihood security, enhances employment generation, and increases income through value addition.

(xii) A large number of irrigation projects have been launched since the beginning of the era of planning in India. However, many projects remained incomplete owing to financial constraints of the States. An Accelerated Irrigation Benefit Programme (AIBP) was launched during 1996-97, to give loan assistance to the States to help them complete some of the incomplete projects. ₹ 50,381 crore had been released under AIBP as Central Loan Assistance/Grant during 1996-97 to November 31, 2011.

(xiii) To meet the demand for bringing in more crops into the purview of crop insurance, extending its scope to cover all farmers (both loanee and non-loanee) and lowering the unit area of insurance, the government introduced 'National Agriculture Insurance Scheme (NAIS)' in the country from Rabi 1999-2000. The scheme envisages coverage of all the food crops (cereals and pulses), oilseeds and annual horticultural/commercial crops, in respect of which yield data are available for adequate number of years. At present, the scheme is being implemented by 25 States and 2 Union Territories. During the last 23 crop seasons, i.e., from Rabi 1999-2000 to Rabi 2010-11, 1,762 lakh farmers over an areas of about 2,685 lakh hectares have been covered, insuring a sum amounting to about ₹ 2,21,307 crore.

With the aim of further improving crop insurance schemes, the modified NAIS (MNAIS) is under implementation on pilot basis in 50 districts in the country from Rabi 2010-11 season. Some of the major improvements made in the MNAIS are — actuarial premium with subsidy in premium at different rates; all claims liability to be on the insurer; unit area of insurance reduced to village panchayat level for major crops; indemnity for prevented/ sowing/planting risk and for post harvest losses due to cyclone; on account payment of up to 25 per cent advance of likely claims as immediate relief; more proficient basis for calculation of threshold yield; and allowing private sector insurers with adequate infrastructure. The scheme has been notified by 17 States in a total of 50 districts for Rabi 2011-12 season.

(xiv) To facilitate access to short-term credit by farmers, a Kisan Credit Card (KCC) scheme was introduced in 1998-99. The scheme has gained popularity and its implementation has been taken up by 27 commercial banks, 378 District Central Cooperative Banks/State Cooperative Banks and 196 Regional Rural Banks throughout the country. About 10.78 crore KCCs had been issued up to October 2011.

(xv) The access to credit for the poor from conventional banking is often constrained by lack of collaterals, information asymmetry and high transaction costs associated with small borrowal accounts. To bring these people within the purview of the organised financial sector, microfinance schemes are assuming increasing importance. Based on the model of the Grameen Bank developed originally in Bangladesh, National Bank for Agriculture and Rural Development (NABARD) in India has been engaged in the task of linking up of self-help groups (SHGs) with the formal credit agencies since 1991-92.

(xvi) In view of the critical importance of rural infrastructure and the lacklustre growth in agricultural investment in the past, concerns were raised about the country's ability to increase production. Consequently, an initiative for setting up of an independent fund called the Rural Infrastructure Development Fund (RIDF) within National Bank for Agriculture and Rural Development (NABARD) was taken in the Union Budget of 1995-96. The corpus of RIDF-I was kept at ₹ 2,000 crore. The successive Budgets have continued with the RIDF scheme. The allocation for RIDF-XVII (2011-12) was ₹ 18,000 crore. The aggregate allocations under RIDF have reached ₹ 1,34,000 crore encompassing RIDF-I to RIDF-XVII. As against this, sanctions aggregating ₹ 1,32,808 crore have been accorded to various State governments and an amount of ₹ 86,631 crore disbursed up to end December 2011. Budget allocation for RIDF-XVIII (year 2012-13) has been kept at ₹ 20,000 crore. Loans under RIDF are given for various rural infrastructure projects like irrigation, rural roads, rural bridges, watershed development, etc.

(xvii) In addition to RIDF, another important initiative for building up rural infrastructure was the announcement of the Bharat Nirman Programme in 2005. This programme covers six components of infrastructure: irrigation, rural roads, rural housing, rural water supply, rural electrification and rural telephony. The targets are as under: (a) irrigation — to create 10 million hectares of additional irrigation capacity; (b) rural roads — to connect all habitations (66,802) with population above 1,000 (500 in hilly/tribal areas) with all weather roads; (c) rural housing — to construct 60 lakh houses for rural poor; (d) rural water supply — to provide potable water to all

uncovered habitations (55,067) and also address slipped back and water quality affected habitations; (e) rural electrification — to provide electricity to all un-electrified villages (1,25,000) and to connect 23 million households below the poverty line; and (f) rural telephones — to connect all remaining villages (66,822) with a public telephone.

4.1.2 AGRICULTURE : TRENDS IN INVESTMENT

As the economy of a backward country develops, the share of primary sector in GDP declines. Accordingly, the contribution of agriculture to GDP declines. This is borne out by Indian data also as the share of agriculture and allied activities in GDP at factor cost has registered a fall from 55.3 per cent in 1950-51 (at 1999-2000 prices) to only 14.4 per cent in 2010-11 (at 2004-05 prices). However, in the Indian context, the decline in the share of agriculture in GDP has not been accompanied by a declining labour force in agriculture and allied activities. While in 1951, 69.5 per cent of the working population was engaged in agriculture, now approximately 52 per cent of the working population is engaged in agriculture. Since the population of the country has been increasing at a fairly rapid rate, the actual burden of the workforce on agriculture has increased considerably. Thus, any decline in investment in agriculture has to be viewed with concern. This is particularly so because the growth of infrastructural facilities (which depends on investment or capital formation) determines the growth of a particular sector. Less investment in agriculture would mean less growth of infrastructural facilities like irrigation, rural roads, market, power, cold storage, etc., and this would, in turn, affect agricultural growth adversely.

Gross Capital Formation and Public Investment in Agriculture

Trends in Gross Capital formation (GCF) in agriculture and public sector investment in agriculture are presented in Table 1 Important results that can be obtained from this Table are as follows:

Table 1 Gross Capital Formation in Agriculture

Year	Total investment in agriculture (₹ crore)	Public sector invest-ment in agriculture (₹ crore)	Share of public sector invest-ment in total investment in agriculture (per cent)	Investment in agriculture as per cent of total investment	Share of GCFA in public sector in total GCF in public sector	Investment in agri-culture as per cent at of GDP constant prices
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Series at 1993-94 prices						
1990-91	14,836	4,395	29.6	9.9	8.3	1.92
1995-96	15,690	4,849	30.9	4.9	5.3	1.57
1996-97	16,176	4,668	28.9	4.8	4.8	1.51
1999-2000	17,304	4,221	24.4	3.5	3.1	1.37
Series at 1999-2000 prices						
1999-2000	50,151	8,670	17.3	10.2	6.0	2.83
2000-01	45,480	8,084	17.7	9.7	5.8	2.39
2001-02	56,979	9,712	17.1	11.7	6.7	2.74
2002-03	55,668	8,734	15.7	10.3	6.5	2.48
2003-04	53,541	10,804	20.2	8.8	7.4	2.12
2004-05	57,759	13,021	22.5	7.7	7.8	2.02

Series at 2004-2005 prices						
2004-05	76,096	16,187	21.3	7.5	6.7	2.65
2005-06	86,611	19,940	23.0	7.3	7.1	2.86
2006-07	90,710	22,987	25.3	6.5	7.1	2.54
2007-08	1,05,034	23,257	22.1	6.5	6.1	2.70
2008-09	1,28,659	22,628	17.6	8.3	5.3	3.09
2009-10	1,33,379	23,635	17.7	7.7	5.2	3.00

Source: Computed from (i) Government of India, *Economic Survey,* 2006-07 (Delhi, 2007), Table 8.19, p. 176 and Statement 1.4, p. S-7 and (ii) Government of India, *Agricultural Statistics at a Glance,* 2011 (Delhi, 2011), Table 3.6 (b), p. 46.

1. Total investment in agriculture was ₹ 14,836 crore in 1990-91 which rose to ₹ 17,304 crore in 1999-2000 (at 1993-94 prices). At 2004-05 prices, total investment in agriculture was ₹ 76,096 crore in 2004-05 and ₹ 1,33,377 crore in 2009-10.

2. As far as public sector investment in agriculture is concerned, it was ₹ 4,395 crore in 1990-91 and ₹ 4,221 crore in 1999-2000 (at 1993-94 prices). In percentage terms, this meant a fall in the share of public investment in total investment in agriculture from about 30 per cent to less than 25 per cent. Thus, the share of private sector in total investment in agriculture rose from about 70 per cent to 75 per cent. In terms of 2004-05 prices, the share of public sector investment in total investment in agriculture was only 17 to 25 per cent from 2004-05 to 2009-10 implying that the share of private sector investment in total investment was as high as 75 to 83 per cent.

3. Gross Capital Formation in Agriculture (GCFA) was 9.9 per cent of total GCF in 1990-91 and this fell drastically to only 3.5 per cent in 1999-2000 in terms of 1993-94 prices (see column 5). This brings out clearly the total neglect of agriculture during the period of 1990s. In terms of 1999-2000 prices, the share of GCFA in total GCF was 10.2 per cent in 1999-2000 which fell to just 7.0 per cent in 2006-07. In terms of 2004-05 prices, the share of GCFA in total GCF was around 7 to 8 per cent over the years 2004-05 to 2009-10. **This poor investment in agriculture is one of the main causes of slow growth in agriculture in recent years.**

4. The share of GCFA in public sector in total GCF in public sector also shows similar trends (see column 6). It was just 6.7 per cent in 2004-05 and 5.2 per cent in 2009-10 (at 2004-05 prices).

5. The share of the agricultural sector's capital formation in GDP was only 2.8 per cent in 1999-2000 and 3.0 per cent in 2009-10.

This decline in public investment in agriculture is a serious cause of concern because of the potential negative impact on agricultural growth over the longer term. Gulati and Bathla have estimated that a 10 per cent decrease in public investment (including irrigation and power) leads to 2.4 per cent annual reduction in agricultural GDP growth.

Interdependence between Public and Private Investment

Some economists have argued that private investment in agriculture has been more than compensating for decline in public investment in agriculture. For example, while public investment in agriculture declined from ₹ 7,301 crore in 1980-81 to ₹ 4,395 crore in 1990-91 (at 1993-94 prices) and stood at ₹ 23,635 crore in 2009-10 (at 2004-05 prices), private investment in agriculture increased from ₹ 6,932 crore in 1980-81 to ₹ 10,441 crore in 1990-91 (at 1993-94 prices) and further to ₹ 1,09,742 crore in 2009-10 (at 2004-05 prices). Accordingly, these economists argue that a decline in public investment in agriculture should not cause any concern. This view is erroneous on account of the following facts:

1. Public investment and private investment cannot be considered to be mutual substitutes in view of their current composition. Public investment is mainly accounted by investments made in medium and major irrigation works, rural roads, markets, storage facilities, rural electrification, etc. In contrast, private investment is essentially taking place for short-term asset building as it is mainly in the areas of mechanisation, ground levelling, private irrigation, etc. That is why, increase in private sector CF cannot be treated as compensating the need for public sector CF.

2. Almost all the studies on the issue use macro level data and ignore its regional dimension. Inducement impact might have disappeared for more irrigated progressive States which have received disproportionately large benefits from public investment in the past aided simultaneously by increased flow of institutional credit diverted to them. However, in many rainfed or dryland farming areas having underdeveloped or backward infrastructure, it is necessary to undertake massive investments for the development of watersheds, roads, rural electrification, etc. Private investment cannot be expected to flow in these activities, so vital for agricultural development.

3. In rainfed or dry farming areas, once massive public investment is undertaken for the development of infrastructure (watersheds, roads, rural electrification, etc.), private investment in horticultural and forestry plantation, livestock production, minor irrigation, new technology for crop production, etc., will receive a considerable boost up.

4. Public investment is found to have indirect externalities in terms of its long-term favourable impact on environment and sustainability of agricultural growth.

The above discussion clearly brings out the importance of public sector capital formation in agricultural development. It needs to be augmented with a definite content and targeted focus, especially in case of rainfed areas, which lack not only irrigation facilities, but also other infrastructural facilities.

Increasing Subsidies Reduce Capital Formation

The most important cause for the decline in public investment in agriculture is the diversion of resources from investment to current expenditure. A large portion of public expenditure on agriculture in recent years went into current expenditure in the form of increased subsidies for food and agricultural inputs (particularly fertilisers, electricity and irrigation). For example, food subsidy increased from ₹ 7,500 crore in 1997-98 to ₹ 67,199 crore in 2011-12. As far as subsidies on agricultural inputs (fertiliser, electricity, irrigation and other subsidies given to marginal farmers and Farmers' Cooperative Societies in the form of seeds, crop insurance schemes, etc.), are concerned, they were as high as ₹ 30,473 crore in 1999-2000 and rose further to ₹ 1,60,917 crore in 2008-09 (at current prices).

As argued correctly by A. Vaidyanathan, **not only is the high level of subsidies fiscally unsustainable, underpricing of inputs is a major cause of indiscriminate and wasteful use of these inputs, raising the costs of production and contributing to degradation of land, pollution of water resources and over-exploitation of groundwater.** The fiscal compulsions for reform in the input sectors are already very strong and will become even more compelling in times to come. According to Vaidyanathan, the political argument for reduction in subsidies lies basically in the fact that these subsidies in effect give recurring doles to producers of the inputs and to a small sector of the farming community (namely, those with pumps, those benefiting from canal irrigation, those using the bulk of fertilisers and credit facilities) — thereby diverting massive amounts of resources from much-needed investments in expanding and improving economic and social infrastructure for the rural masses.

Increasing Public Sector Capital Formation through RIDF

One important step taken for improving capital formation in the public sector was the creation of Rural Infrastructure Development Fund (RIDF) in 1995-96 with a corpus of ₹ 2,000 crore with the objective of providing funds to State governments and State owned corporations to enable them to complete various types of rural infrastructure

projects. Since 1995-96, the scheme has continued in each succeeding year with enhancement of the volume the fund. The total allocation under RIDF (RIDF-I to RIDF-XVII, i.e., 1995-96 to 2011-12) amounted to ₹ 1,34,000 crore. The resources for the Fund are contributed by the scheduled commercial banks to the extent of the shortfall in meeting their priority sector lending targets. Loans under RIDF are given for various purposes like irrigation projects, watershed management, construction of rural roads and bridges etc.

While the creation of RIDF is expected to improve the infrastructural facilities in various States, Rao and Jeromi have drawn attention to certain issues. **First,** RIDF is not an additional resource to the agriculture sector. Rather, it is a mechanism through which private sector resources (in the form of deposits) are diverted to the public sector. Had the banks met the stipulated target of priority sector lending, the resources would have automatically gone to the farmers and probably the efficiency in their use would have been greater. **Second,** though the NABARD (National Bank for Agriculture and Rural Development) sanctioned the funds to the State governments, their disbursement is not impressive. This would be clear from the fact that as at end-March 2008, cumulative disbursement was just 61.5 per cent of cumulative sanctions (calculated from data given above). According to Reserve Bank of India, the low level of utilisation of funds was mainly due to "inadequate budget of the State governments affecting timely flow of funds to the implementing departments, delays in completion of formalities related to drawal of funds, and delays in completion of preliminary work in respect of irrigation projects which involves land acquisition formalities, obtaining environmental clearance from the Central government, tendering procedures, etc." **Third,** RIDF provided a golden opportunity to the commercial banks to park their funds without risk and that made the banks less interested in expanding their priority sector lending.

4.1.3 NATIONAL AGRICULTURAL POLICY

The Government of India announced a National Agriculture Policy on July 28, 2000. This policy seeks to **"actualise the vast untapped growth potential of Indian agriculture, strengthen rural infrastructure to support faster agricultural development, promote value addition, accelerate the growth of agro business, create employment in rural areas, secure a fair standard of living for the farmers and agricultural workers and their families, discourage migration to urban areas and face the challenges arising out of economic liberalisation and globalisation."** Over the next two decades, National Agriculture Policy aims to attain: (i) a growth rate in excess of 4 per cent per annum in the agriculture sector; (ii) growth that is based on efficient use of resources and conserves our soil, water and biodiversity; (iii) growth with equity, i.e., growth which is widespread across regions and farmers; (iv) growth that is demand-driven and caters to domestic markets and maximises benefits from exports of agricultural products in the face of the challenges arising from economic liberalisation and globalisation; and (v) growth that is sustainable technologically, environmentally and economically.

The main features of the National Agriculture Policy are as under:

1. Privatisation of agriculture and price protection of farmers in the post-QR (quantitative restrictions) regime would be part of the government's strategy to synergise agricultural growth. The focus of the new policy is on efficient use of resources and technology, adequate availability of credit to farmers and protecting them from seasonal and price fluctuations.
2. Private sector participation would be promoted through contract farming and land leasing arrangements to allow accelerated technology transfer, capital inflow, assured markets for crop production, especially of oilseeds, cotton and horticultural crops.
3. Private sector investment in agriculture would be encouraged, particularly in areas like agricultural research, human resource development, post harvest management and marketing.

4. In view of dismantling of QRs (quantitative restrictions) on imports as per WTO agreement on agriculture, the policy has recommended formulation of commodity wise strategies and arrangements to protect farmers from adverse impact of undue price fluctuations in the world market and promote exports.
5. Government would enlarge coverage of futures markets to minimise the wide fluctutations in commodity prices as also for hedging their risks. The Policy hopes to achieve sustainable development of agriculture, create gainful employment and raise standards of living.
6. The Policy envisages evolving a "National Livestock Breeding Strategy" to meet the requirement of milk, meat, egg and livestock products and to enhance the role of draught animals as a source of energy for farming operations.
7. Plant varieties would be protected through a legislation to encourage research and breeding of new varieties. Development of animal husbandry, poultry, dairy and aquaculture would receive top priority.
8. High priority would be accorded to evolve new location-specific and economically viable improved varieties of farm and horticulture crops, livestock species and aquaculture. Domestic agriculture market would be liberalised.
9. The restrictions on the movement of agricultural commodities throughout the country would be progressively dismantled. The structure of taxes on foodgrains and other commercial crops would be reviewed.
10. The excise duty on materials such as farm machinery and implements and fertilisers used as inputs in agricultural production, post harvest storage and processing would be reviewed.
11. Appropriate measures would be adopted to ensure that agriculturists, by and large, remained outside the regulatory and tax collection system.
12. Rural electrification would be given high priority as a prime mover for agricultural development.
13. The use of new and renewable sources of energy for irrigation and other agricultural purposes would be encouraged.
14. Progressive institutionalisation of rural and farm credit would be continued for providing timely and adequate credit to farmers.
15. Endeavour would be made to provide a package insurance policy for the farmers, right from sowing of crops to post harvest operations, including market fluctuations in the prices of agricultural produce.

As is clear from the above, the National Agriculture Policy lists each and every possible objective. The policy path to achieve these objectives branches into several trails: sustainable agriculture, food and nutritional security, generation and transfer of technology, incentives for agriculture, investments in agriculture, institutional structures, risk management, and finally management reforms. However, as correctly pointed out by Ashok Gulati, the policy paths and measures enumerated are mere 'intentions'. Nowhere does the document specify 'HOW' these intentions are going to be converted into reality.

4.1.4 WTO AND INDIAN AGRICULTURE

Agreement on Agriculture (AoA)

As we shall discuss in detail in the chapter on 'India and the World Economy', the Uruguay Round of negotiations led to the birth of the World Trade Organisation (WTO) in January 1995. Under the Uruguay Round, all member nations of GATT participating in negotiations committed themselves to a widespread reduction in tariffs, removal of quantitative restrictions and opening up their economies to international competition in most fields of economic activity. Thus, the

new international economic order that is taking shape under the aegis of WTO is likely to pull down drastically the levels of domestic protection in all areas of economic activity. As far as agriculture is concerned, **the Agreement on Agriculture (AoA) provides framework for the long-term reform of agricultural trade and domestic policies over the years to come, with the objective of introducing increased market orientation in agricultural trade. AoA deals specifically with: (1) providing market access, (2) regulating domestic support, and (3) containing export subsidies.**

Providing Market Access. As far as providing market access is concerned, AoA required that the prevailing non-tariff barriers in agriculture, which were considered trade distorting, were to be abolished and converted into tariffs so as to provide the same level of protection and subsequently the tariffs were to be progressively reduced by a simple average of 36 per cent by the developed countries over 6 years (year ending 2000) and by 24 per cent by the developing countries over 10 years (year ending 2004) (See Table 18.2). The minimum market access opportunities were to be provided at 3 per cent of the domestic consumption in 1986-88 (to be established by the year 1995) and rising up to 5 per cent by the end of the implementation period.

Reducing Domestic Support. As far as the question of reducing domestic support is concerned, AoA divides domestic support into two categories — (1) trade distorting, and (2) non-trade distorting (or minimal trade distorting). All trade distorting domestic support is placed in, what is called, 'Amber Box.' As far as non-trade distorting or minimal trade distorting domestic support measures are concerned, they have been divided into: (1) Green Box, (2) Blue Box and (3) Special and Differential (S&D) Box. The Green Box measures include assistance given through environmental assistance programmes, services such as research training and extension, marketing information, certain types of rural infrastructure, etc. **The support under Green Box is excluded from any reduction commitments and is not subject to any upper limit.** Subsidies under Blue Box include direct payments given to farmers in the form of deficiency payment (i.e., the difference in the government's minimum support price and market price is paid directly to the farmers, as is the practice in USA), direct payments to farmers under production limiting programmes, as in European Union, etc. **Support under Blue Box is also exempted from any reduction commitments but it has an upper limit.** The Special and Differential (or S&D) Box measures include measures taken by developing countries, otherwise subject to reductions, such as investment subsidies and various agricultural input subsidies generally available to low income and resource poor producers in a developing country.

All trade-distorting domestic support has been put in the Amber Box. This has to be quantified in accordance with the Aggregate Measure of Support (AMS) and removed. The AMS consists of two parts — product specific and non-product specific. The product specific support is the difference between domestic support prices (as procurement prices in India) and external reference prices, multiplied by the quantity of production which gets such support. The non-product specific support is the subsidy on various agricultural inputs like fertilisers, electricity, irrigation and credit. AoA stipulated the reduction of total AMS by 20 per cent for the developed countries over a period of 6 years, while the developing countries were required to reduce the total AMS by 13 per cent over a period of 10 years. Reduction commitments refer to total levels of domestic support and not to individual commodities. **Policies which amount to domestic support, both under product specific and non-product specific categories at less than 5 per cent of the value of production for developed countries and less than 10 per cent for developing countries are excluded from any reduction commitments (these are known as 'de-minimis' subsidies).** Policies which have no, or at the most minimal, trade distorting effects on production, are also excluded from any reduction commitments.

Containing Export Subsidies. As far as export subsidies are concerned, as is clear from Table 4.2 the developed countries were required to reduce the volume of subsidised exports by 21 per cent over 6 years and the budgetary outlays for export subsidies by 36 per cent with respect to the base period 1986-90. Developing countries were required to reduce the volume by 10 per cent and budgetary outlays by 24 per cent over 10 years.

Table 4.2 Reduction Commitments Under AoA

	Developed Countries (1995-2000)	Developing Countries (1995-2004)
(1)	(2)	(3)
Tariffs (Base 1986-88) Average cut for all agricultural products	36%	24%
Domestic support, Total AMS (Base 1986-88)	20%	13%
Export subsidies (Base 1986-90) (Budgetary outlays for export subsidies)	36%	24%
Volume of subsidised exports	21%	14%

Other Agreements Related to Agriculture

While AoA is directly concerned with agriculture, there are some other WTO agreements that have a close bearing on agriculture and influence free and fair trade in agriculture. In particular, one may mention three agreements: (1) Agreement on Sanitary and Phyto-Sanitary (SPS) measures, (2) Agreement on Technical Barriers to Trade (TBT), and (3) Trade Related Intellectual Property Rights (TRIPs). As far as agreement on SPS measures is concerned, section 2 of the Article says that SPS measures conforming to international standards shall be deemed to be necessary for protection of human, animal or plant life or health. Section 3 of the Article allows countries to fix higher standards than international standards if there is a scientific justification or as a consequence of consistent risk decisions based on an appropriate risk assessment. Agreement on TBT aims to encourage the use of international standards and calls for national testing and certifying bodies to avoid discrimination against imports. Agreement on TRIPs covers seven types of intellectual property for protection, namely, patents, copyrights, trademarks, industrial designs, geographical indications, design layouts of integrated circuits and undisclosed information. As far as agriculture is concerned, Article 27.3(b) of the agreement requires members to provide for protection of plant varieties either by patent or by an effective *sui generis* system or by any combination thereof.

Developing Countries and AoA

Signing of AoA and allied agreements was greeted by great euphoria by a number of developing countries as it was expected that these agreements would open up the markets for their products in developed countries. As far as India is concerned, support given to agriculture was negative while developed countries of OECD (Organisation for Economic Cooperation and Development) were found heavily subsidising their agriculture. Based on this, it was expected that the implementation of AoA would result in reduction of domestic support in OECD countries, which would in turn raise international prices of agricultural commodities and would improve export prospects for India and other countries. However, contrary to expectations, international agricultural prices have declined sharply in the post-WTO period and agricultural exports from developing countries such as India have declined. The last eighteen years of the operations of AoA and allied agreements have shown that several asymmetries and inequalities exist in them which are not conducive to the trading interests of the developing countries including India. In fact, all agreements are heavily loaded in favour of the developed countries as the following discussion amply brings out.

1. As stated earlier, **support under Green Box is regarded as non-trade distorting and hence not subject to reduction commitments. The developed countries have used this arrangement to their maximum advantage.** This would be clear from the fact that highest Green Box support to agriculture is provided by the USA which spends more than a third of its GDP from agriculture on this support. Japan uses one-fourth of its GDP from

agriculture towards Green Box provisions while such support in Canada and European countries is around 13 per cent of GDP from agriculture. As against this, India provided Green Box support of only 2.34 per cent of its GDP from agriculture in 1995 (data are available for India only for the year 1995). Not only the developed countries have succeeded in getting major advantage under Green Box support, they have used the ambiguity in definition and classification of such support to shift support from non-exempt categories to exempt categories.

2. Despite the commitment to reduce agricultural subsidies substantially, **the developed countries have not shown any willingness to cut down subsidies.** For instance, the USA provided $ 36,958 million support to farmers in the base period 1986-88. This rose to $ 42,669 million in 2005 (as a percentage of gross farm receipts, the subsidy was 22 per cent in 1986-88 and 16 per cent in 2005). The European Union provided $ 90,924 million support to farmers in the base period 1986-88 and $ 1,33,785 million support in the period 2005 (as a percentage of gross farm receipts, the subsidy was 41 per cent in 1986-88 and 32 per cent in 2005). Japan provided $ 49,579 million support to farmers in the base period 1986-88 and $ 47,435 million in 2005 (as a percentage of gross farm receipts, the subsidy was 64 per cent in 1986-88 and 56 per cent in 2005). The OECD group of countries, as a whole, provided $ 2,42,474 million support to farmers in the base period. This rose to $ 2,79,845 million in 2005 (as a percentage of gross farm receipts, the subsidy was 37 per cent in 1986-88 and 29 per cent in 2005). These data amply bring out the fact that the developed countries have not fulfilled the commitments regarding the cutting down of agricultural subsidies.

It is argued by some developed countries that rather than requiring them to reduce the level of support for agriculture, other countries should raise the level of support to their agriculture if they are affected by the support provided by the former. As correctly pointed out by Ramesh Chand and Linu Mathew Phillip, this argument not only runs counter to distortion free trade but also ignores the variations in capacity and structural composition of the economies of developed and developing countries. Since agriculture constitutes a very small part of the developed countries (between 2-4 per cent), these countries can provide high level of subsidy. In fact, to subsidise agriculture to the extent of 50 per cent, developed countries have to spend only 1-2 per cent of their total GDP. As against this, developing countries would require about 14 per cent of their total GDP to match the support given by developed countries. This shows that it is not possible for developing countries to offset the disadvantage to their agriculture, due to high level of subsidies provided by developed countries, by raising the level of support.

3. A break-up of total agricultural subsidies into different categories as shown in Table 18.3 reveals how cleverly the developed countries have played their cards. As stated earlier, while the current Total AMS subsidies are subject to reduction commitments and while Blue Box and de minimis subsidies could be subject to similar discipline, Green Box subsidies are not subject to reduction commitments. As is clear from Table 4.3, even if the entire volume of Current Total AMS, Blue Box and de minimis subsidies are reduced to zero, which is quite unlikely, only half the total subsidies would be subjected to reduction commitments. This does not include the very real possibility of box shifting or subsidy reclassification, which could then increase the share of Green Box subsidies. **Distortions arising out of Green Box subsidies might be significant and would remain inadequately addressed during the current ongoing process of negotiations.**

4. As far as the reduction of tariffs by developed countries by a higher margin (36 per cent) is concerned, R. Thamarajakshi has argued that (i) the developed countries had protected their agriculture substantially and reached peak level of tariff before the Uruguay Round so that even after a 36 per cent reduction, their rates are absolutely and relatively very high; (ii) AoA did not mandate reductions in absolute terms but only in relative terms; and (iii) requirement of mandatory reductions being on an unweighted basis enabled developed countries to lower the higher tariffs on products of export interest to developing countries by only the minimum level of around 15 per cent and make substantial reductions in items of not so much trade relevance to the latter.

5. Let us now consider export subsidies. Such subsidy is very common and very high in European countries and in North America as their domestic prices rule higher than international prices. In order to maintain their high domestic price level and to encourage disposal of surplus in outside markets, these countries provide huge export subsidies. As stated in Table 2, developed countries were required to reduce the volume of subsidised exports by 21 per cent and the budgetary allocations for export subsidies by 36 per cent over the period 1995-2000. However, the export subsidies granted by developed countries on agricultural goods (wheat and wheat flour, rice, butter and butter oil, skim milk powder, sugar, etc.), are so high that these reductions are not likely to have much effect. **The high level of export subsidies granted by the developed countries constitute the most trade-distorting practice.** As correctly pointed out by R. Thamarajakshi, **the AoA has been structured in such a way as to deny increased market access to developing countries.**

6. Commenting on the progress of reduction commitments on export subsidies under AoA over the period 1995-2000, R. Thamarajakshi notes that "current levels of agricultural support in developed market economies are still high and continue to encourage domestic production, distort trade and depress world prices." In fact, the share of developing countries in world agricultural exports remained virtually unchanged; the percentage which had marginally risen to 42 per cent in 1997 and 43.5 in 1998 slipped to 43 per cent in 1999. Growth of agricultural exports from developing Asia in the post-Uruguay period, i.e., 1994-98 declined steeply to 0.5 per cent from 8.2 per cent in 1990-94. At the same time, Asia's merchandise import growth in 2000 which was the strongest of all the regions (23.5 per cent) exceeded its export growth for the second year in a row in this period. As far as agricultural exports from India are concerned, their share in total exports which was 18.5 per cent in 1990-91 and 19.1 per cent in 1995-96, fell to only 9.9 per cent in 2009-10.

Table 3: Comparison of Green Box, Blue Box, Current Total AMS, and *De Minimis* Subsidies **(US $ million)**

	Green Box	Blue Box	Current Total AMS	*De minimis*	Total
	(1)	(2)	(3)	(4)	(5)
EU	20,749.90	23,040.10	56,571.10	612.10	1,00,698.20
US	51,246.00		6,238.10	811.60	58,295.70
Canada	859.20		364.10	665.10	1,888.40
Japan	23,445.40	392.10	5,987.10	589.80	30,414.40
Switzerland	2,190.40		2,257.60		4,448.00
Norway	515.40	1,044.40	1,442.70		3,002.50
Total	**98,731.30**	**24,476.60**	**72,860.70**	**2,678.60**	**1,98,747.20**

Note: Data are for the year 2000, the last implementation year for current obligations in the AoA.

Source: Veena Jha, Kailas Karthikeyan and Abhijit Das, "Impact of Trade Liberalisation on Indian Agriculture, in Veena Jha (ed.) *India and the Doha Work Programme,* (Delhi, 2006), Table 2.29, p. 114.

Because of high subsidies on agricultural exports given by developed countries, their agricultural products sell below the cost of production in international market. For example, a study by Sophia Murphy, Ben Lilliston and Mary Beth Lake (2005) showed that in 2003, developed countries exported wheat at an average price of 28 per cent below cost of production, soyabeans and corn at an average price of 10 per cent below cost of production, rice at an average price of 26 per cent below cost of production, and cotton at an average price of 47 per cent below cost of production. Moreover, there was a considerable jump in export dumping of these commodities during the period 1997-2003 as compared with the period 1990-96. On account of these factors, the prices of these agricultural products in world markets were far below their costs of production. "Hence, Indian farmers engaged in the production of these crops were denied their share in the world market and driven out of their domestic market, and either forced into producing

an alternative crop or having being driven out of business, were forced to migrate to large cities such as Delhi and Mumbai to eke out a miserable living through piecemeal work."

7. The developed countries have also taken refuge under the SPS agreement and TBT agreement to selectively ward off imports from developing countries by imposing higher standards than those prescribed by international bodies (as stated earlier, Section 3 of the Article on SPS measures entitles them to do so). The developed countries have been successful in their designs because standards assessment is a qualitative and subjective exercise.

Agriculture at Hong Kong Ministerial

The Sixth Ministerial Conference was held at Hong Kong from December 13 to 18, 2005. As far as agriculture is concerned, the main agreements arrived at in this Ministerial Conference were as under:

1. Agricultural export subsidies will be phased out by the developed countries by 2013.
2. However, domestic support would continue implying that agricultural output of the developed countries would still be subsidised.
3. On grounds of food security, livelihood security and rural development needs, developing countries will be allowed to self designate 'Special Products' which will attract more flexible tariff reduction treatment.
4. There will be Special Safeguard Mechanism (SSG) for developing countries.
5. For cotton, export subsidies will be eliminated by developed countries in 2006.

However, these agreements do not mean much for the developing countries as the developed countries have played their cards very cleverly. It may also be noted here that all time lines laid down in the Hong Kong Ministerial Conference have been missed. Even after Hong Kong Ministerial Conference, in all negotiations that have taken place so far, the developed countries have not relented and their stubborn attitude on maintaining agricultural subsidies has led to breakdown of all talks.

Globalisation and Priority Issues for Indian Agriculture

India had expected that with the dismantling of domestic support in developed countries and widespread reduction in export subsidies by these countries, as a part of their commitments under WTO, market access for Indian agricultural products in developed countries would expand. However, as is clear from the detailed discussion above, the developed countries have played their cards very cleverly and have taken effective steps to block agricultural exports from developing countries including India behind various loopholes in AoA and allied agreements. On the other hand, India has provided increased market access to other countries by effectively dismantling quantitative restrictions during the last few years. To protect the Indian agriculture and Indian farmers from foreign competition, it is therefore imperative for the government to lay down priorities for action. In particular, action is required in the following directions:

1. The principles of level playing field, distortion free trade and efficiency require that the high level of subsidy and support in developed countries must be brought down. According to Ramesh Chand and Linu Mathew Phillip, in order to achieve this, **India (alongwith other developing countries) should press for clubbing of all kinds of support to agriculture in one category, and then seek reduction in total support rather than AMS alone, to achieve some parity among developed and developing countries.** Further, to reduce the advantage to developed countries' agriculture due to high government support, other member countries should have the freedom to impose protective tariff linked to differences in domestic support.

2. A country which globalises its agricultural sector cannot achieve self sufficiency in production because globalisation will require specialisation in those agricultural commodities in which it has a comparative advantage. For countries like India, with large population and low purchasing power, the impact of globalisation on availability of food at relatively lower prices is of concern both politically and ethically. Also, as correctly pointed out by V.S. Vyas, "Advocacy of unrestricted exposure to international markets ignores the fact of the dependence of a large majority of rural producers on foodgrains production as their main source of livelihood; it overestimates the resilience of the system to compensate these producers from heavy and sudden dislocations". Hence, **food self-sufficiency at the national level is desirable so that reliance on trade can be kept within limits.**

3. Deepak Nayyar and Abhijit Sen have shown that **world market prices are liable to more year-to-year fluctuations than domestic prices. Therefore, dismantaling of trade barriers is likely to increase volatility of domestic prices and farm incomes.** Accordingly, adequate steps must be taken to protect farm incomes. Further, domestic prices will be more volatile when there is an incidence of dumping by countries having bumper harvest. Therefore, due precaution has to be taken in case of large-scale imports of agricultural commodities.

4. Rao and Jeromi point to the possibility that **globalisation may adversely affect certain areas, some crops and some groups of people.** This is due to the reason that the benefits from globalisation will largely accrue to some areas which are well endowed in terms of resources, some crops which have comparative advantage, and some sections of the population that are engaged in producing the export commodities. In other words, the benefits of globalisation may not be neutral to areas, crops and people. Further, as globalisation may raise the prices of some of the essential commodities, it will have adverse welfare effects on the people. Therefore, the Indian agricultural policy needs to build-up adequate 'safety nets' to protect the interests of crops, people and regions which are likely to be adversely affected by globalisation.

Box 1: India's Stand on Agricultural Issues in WTO

India's total exports of agricultural and allied products including plantations at US $17.96 billion in 2009-10 constitute 9.9 per cent of its export share. Developed country markets continued to account for nearly 35 per cent of India's agri-exports. However, its contribution to national economy is significant in terms of sustaining livelihood of a significant proportion of the population, including a large number of producers and landless agricultural labourers (characterised as low-income and resource-poor). This section of population lacks skills and are not covered under any safety nets, which are essential for ensuring a minimal cross-sector labour mobility. Like India, most developing countries are in a similar situation in sharp contrast to the reality of the agriculture sector in developed countries. Apart from a number of agricultural crops, a number of other products, including livestock products, are produced in hilly/mountainous or other disadvantaged regions, or by tribal communities and women. India, and other developing countries have, therefore, been insisting that **special and differential treatment for developing countries must be integral to all aspects, including the negotiated outcome, on agriculture under the Doha Round in the WTO.** Mitigating the risks facing the low-income, resource-poor and subsistence farmers associated with price declines, price volatility and predatory competition and other market imperfections, including the huge amounts of production and trade-distorting subsidies provided by some developed countries to their agriculture sector, remains paramount. Therefore, alongwith other developing countries, particularly its alliance partners in the G-20 and G-33, **India has been emphasising that the Doha agricultural outcome must include at its core:**

- **removal of distorting subsidies and protection by developed countries to level the playing field, and**
- **appropriate provisions designed to safeguard food and/or livelihood security, and to meet the rural development needs in developing countries.**

Specific demands by India are as follows:

1. Overall tariff reductions on bound rates for developing countries of not more than 36 per cent.
2. Threshold of the four band tariff formula with linear cuts to be adequately higher for developing countries to take into account their ceiling bindings.

3. Self-designation of an appropriate number of special products (SP) guided by indicators based on the three fundamental and agreed criteria of food security, livelihood security and rural development needs. The G-33 has proposed 20 per cent agricultural tariff lines as special products, of which 40 per cent must be exempted from any tariff cut.
4. An operational and effective Special Safeguard Mechanism (SSM) to check against global price dips and import surges, which is more flexible than the existing safeguard mechanism available mainly to developed countries. The G-33 and India remain firm that a priori exclusion of any product, particularly SPs from the ambit of the SSM cannot be justified or accepted.
5. Substantial and effective cuts in overall trade-distorting domestic support by the United States (70-75 per cent cut) and by the European Union (75-80 per cent cut), including resolving the issue of product-specific caps on Aggregate Measure of Support (AMS) and in the new Blue Box.

Source: Government of India, *Economic Survey,* 2006-07 (Delhi, 2007). Box 6.7, p. 125 and *Economic Survey,* 2007-08 (Delhi, 2008), Box 6.9, p. 150.

5. India's domestic support to agriculture is presently well below the limit of 10 per cent of the value of agricultural produce and therefore India is not required to make any reduction in it at present. However, once the exemptions provided to the developing countries are withdrawn, there can be some pressure for reduction of subsidy, especially the subsidy for food procurement and its distribution through the PDS (Public Distribution System). Therefore, **India should press for a 'food security box' and a 'Development Box' to be placed alongside the Green Box.** As correctly, pointed out by R. Thamarajakshi, the argument that trade liberalistion would organise international production of foodgrains in an optimal way and help deliver cheap food to the poor in the developing countries is hypothetical. The sheer magnitude of the task in large developing countries with widespread poverty requires national government to be incharge of the task.

6. For decades, India did not allow patents on seeds or plants and had no system of protection for plant varieties. This is due to the reason that India, alongwith other developing countries, adhered to the principle of 'common heritage of mankind', i.e., that agricultural resources are to be freely used and shared by all. However, **the TRIPs agreement under WTO stipulates that all member countries must grant IPRs (intellectual property rights) protection for plant varieties.** This stipulation is also geared to favour the developed countries — in particular, the MNCs (multinational corporations) belonging to the developed countries. In fact, MNCs are fully aware of the vast and expanding market for improved seed varieties in the developing countries. Advances in biotechnology have opened up new vistas for genetic engineering and MNCs are gearing to engage themselves in the breeding of new varieties which could be used to capture the untapped and vast market in the developing countries for improved seeds. They have lobbied for including agriculture related innovations under a worldwide IPR regime, so that they can get a monopoly over varieties and chemicals developed by their research for a long period.

As we discuss 'Agricultural Inputs and Green Revolution', the Indian Parliament passed the 'Protection of Plant Varieties and Farmers' Rights Legislation' in August 2001 to meet the obligations under the TRIPs agreement. As we shall point out there, India opted for the sui generis system after a determined struggle by civil society to stop seed patents. This has effectively blocked the strategy of the MNCs. However, as pointed out by Anitha Ramanna, national and international laws need to be formulated to ensure adequate access to agricultural resources, and not aimed only at establishing ownership rights.24 India owns a vast amount of genetic resources and if these were freely available, corporations from advanced countries would be able to access these resources without payment and utilise them to create patentable products.

7. As argued in the section on 'Agriculture: Trends in Investment' earlier in this chapter, public investment in agriculture has been declining for quite some years. In the context of international trade, there is an added urgency to

reverse this trend and increase investment in research, integrated market development, storage and warehousing facilities, road development, etc. Public expenditure on research and technology, infrastructure creation and rural development will raise our AMS without attracting reduction commitments.

4.1.5 AGRICULTURAL GROWTH CONCERNS

The growth in the agricultural sector has all through the period of planning remained less than the overall growth in the economy. What is a matter of concern is the fact that, while in the post-liberalisation period (the period since 1991) the growth rate in the non-agriculture sector picked up, that in the agricultural sector decelerated. Since agriculture continues to support more than half a billion people providing employment to 52 per cent of the workforce, urgent steps are required to arrest the decelerating trends. It is in this context that the target for pushing up the rate of growth in agriculture sector to 4 per cent per annum as laid down by the Eleventh Five Year Plan and the Approach Paper to the Twelfth Plan must be viewed and necessary steps initiated to accomplish it.

Important facts regarding agricultural growth are as follows:

1. While the rate of growth in the agriculture sector has always been less than the overall growth rate of the economy, the gap between the growth of agriculture and non-agriculture sector began to widen since 1981-82, because of an acceleration in the growth of industry and service sectors.
2. There has been a serious set-back to agriculture during the period of Ninth and Tenth Plans with the rate of growth in this sector decelerating to less than 2.5 per cent per annum.
3. The increasing gap between the agriculture and non-agriculture sectors was most prominent during the Tenth Plan. While the overall GDP increased at the rate of 7.8 per cent per annum, the agriculture sector registered a rate of growth of only 2.3 per cent per annum.
4. The increasing divergence between the growth trends of the total economy and that of agriculture and allied sectors suggests an under-performance by agriculture. It is also significant that unlike the overall economic growth pattern, agricultural performance in India has been quite volatile. According to the Report State of Indian Agriculture, 2011-12, **the coefficient of variation (CV) in agricultural growth during the period 2000-01 to 2010-11 was 1.6 compared to 1.1 during 1992-93 to 1999-2000. This is almost six times more than the CV observed in the overall GDP growth of the country indicating that high and perhaps increasing volatility is a real challenge in agriculture, which is likely to increase in the years to come in the wake of climate change.** High fluctuations in growth create conditions of volatile prices, uncertainty regarding buffer stock management, and concerns regarding food security.
5. *Economic Survey,* 2007-08, notes another disturbing fact and this pertains to food availability. Between 1950-51 and 2006-07, production of foodgrains increased at an average annual rate of 2.5 per cent compared to the growth of population which averaged 2.1 per cent during this period. As a result, India almost become self-sufficient in foodgrains. However, the rate of growth of foodgrains production decelerated to 1.2 per cent during 1990-2007, lower than the annual rate of growth of population, averaging 1.9 per cent. **The per capita availability of cereals and pulses therefore witnessed a decline during this period.**

According to *Economic Survey,* 2006-07, the reasons for the lacklustre agricultural growth during the new millennium are the **structural weaknesses** of the agricultural sector reflected in low level of public investment, exhaustion of the yield potential of new high yielding varieties of wheat and rice, unbalanced fertiliser use, low seeds replacement rate, an inadequate incentive system and post harvest value addition. Also, as noted by the *Survey,* low yield per unit area across almost all crops has become a regular feature of Indian agriculture. For example, though India accounted for 19.5 per cent of global paddy production in 2009, the estimated yield per hectare in that year was less than half

than that in China and Japan, and less than a third of that in Egypt, which had the highest yield level in 2009. Similarly, in wheat, while India accounting for 11.8 per cent of global production, had average yield slightly lower than the global average, it was only 36.7 per cent of the highest level estimated for UK in 2009. Similar story holds for most other crops.

As we discuss not only is productivity in Indian agriculture low as compared with other countries, it is also considerably less in comparison with the potential productivity. Accordingly, as noted by *Economic Survey,* **"there is tremendous scope for increasing yield levels with technological breakthroughs."** Moreover, as has been repeatedly pointed out by a number of economists, **pushing up public investment in agriculture is the basic requirement for growth.** On the basis of their detailed study of Indian agriculture, Archana S. Mathur, Surajit Das and Subbalakshmi Sircar have pointed out that given other factors, **a consistent increase in public investment to 15 per cent per annum should lead to agricultural growth of 4 per cent, which is concomitant with the projected growth rate in the Eleventh Five Year Plan.** The focus of enhanced government expenditure should particularly be on investment in rural infrastructure comprising irrigation and water management, processing, storage and marketing, apart from timely supplies of improved inputs, credit, research and extension services. **The other factors that are important for a higher agricultural growth are fertiliser usage and agricultural prices.**

The performance of the agricultural sector during the period of the Eleventh Five Year Plan (2007-2012) has been much better than the performance during the Ninth and Tenth Plans and the rate of growth in this Plan is estimated at 3.3 per cent per annum as against only 2.4 per cent per annum in the Ninth Plan and 2.3 per cent per annum in the Tenth Plan. However, even this is less than the targeted rate of growth of 4.0 per cent per annum. *The Approach Paper to the Twelfth Plan* has, accordingly, emphasised the need to "redouble our efforts to ensure that 4.0 per cent average growth" is achieved during the Twelfth Plan if not more. However, as noted by *Economic Survey* 2011-12, "without incremental productivity gains and technology diffusion across regions, achieving this higher growth may not be feasible and has implications for the macroeconomic stability given the rising demand of the 1.2 billion people for food. **Achieving minimum agricultural growth is a pre-requisite for inclusive growth, reduction of poverty levels, development of the rural economy and enhancing of farm incomes".**

4.1.6 SUMMARY

This unit deals with the State policy towards agriculture and rural development. Then it examines the trends of investment in agriculture. It also highlights the National Agricultural Policy. Then it throws lights on WTO and its impact on Indian agriculture. Lastly, it concludes with the agricultural growth concerns and suggests some policy measures.

4.1.7 SELF ASSESSMENT QUESTIONS

1. Critically explain the state policy towards agricultural and rural development.
2. Briefly analyze the recent National Agricultural Policy.
3. Examine the impact of W.T.O. on Indian agriculture.

Key Terms

1. **Rural Development:** The process of improving the quality of life and economic well-being of people living in rural areas through various strategies and initiatives.
2. **Agricultural Extension:** The dissemination of agricultural knowledge, technology, and practices to farmers and rural communities to enhance productivity and sustainability.
3. **Infrastructure Development:** The construction and improvement of basic physical and organizational structures and facilities such as roads, bridges, schools, healthcare centers, and markets in rural areas.
4. **Sustainable Agriculture:** Farming practices that aim to maximize productivity while minimizing negative environmental impacts, ensuring long-term viability.
5. **Community Development:** Initiatives that empower local communities to identify and address their own needs, fostering self-reliance and social cohesion.
6. **Livelihood Diversification:** Encouraging rural residents to engage in multiple income-generating activities beyond traditional agriculture to improve resilience to economic shocks.
7. **Value Chain Development:** Strengthening the linkages between producers, processors, marketers, and consumers to add value to agricultural products and improve market access for rural producers.

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4.2 Chapter

INDIA'S FOOD POLICY

Objectives

After completing this chapter, you will be able:

- To know the meaning of food security
- To understand the problems of food security
- To understand the role of public distribution system (PDS.), TPDS, ICDS and school mid-day meals in ensuring food security in India
- To know about the Indian Tax Policy for Agricultural Income.
- To highlight the problem of food security in India
- To understand the role of public distribution system in esuring food security
- To know about the taxation of agriculture land
- To know about the land income

Structure:

4.2.0 INTRODUCTION

Since food is an effective dialogue between civilization and man, its quality on no account should be compromised with anything that looks trash. Prof. P.R. Brahmananda, the noted economist of India, once said "Civilization is not how much it eats, but how little it eats with what calorie." The ultimate vision document is drafted in terms of maximum

nutritional value in foodgrains which assures to all individuals a disease free and marathon longevity on this planet. All the advanced countries of the world have completed their postgraduation in food and nutritional care, whereas, India is still in its kindergarten stage. A joint concerted effort is all that we need to look forward to, for translating this poverty struck landscape of India to a valley of plenty.

According to Food and Agriculture Organization (FAO) food security or the absence of hunger exists "when all people at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life." From this definition, the concept of food security has undergone a paradigmatic shift from a simplistic view of food production, availability and food demand to household nutritional security, energy intake and hunger. Food Security therefore, involves three things; Food availability, Food accessibility and Food absorption or nutrition. Food availability index indicators are: per capita agricultural output, share of forest area, irrigation extent and rural connectivity. Similarly, food accessibility indicators are: average per capita income/expenditure, ratio of working population, proportion of SC and ST population, real wages, rural female literacy. Food absorption or nutrition index indicators are : access to primary health centre and health care facilities, access to safe drinking water, access to sanitary facilities. Food insecurity, therefore, may be described as absence of any one of the above indicators. Both natural and man-made causes are responsible for occurrence of food insecurity.

4.2.1 THE PROBLEMS OF FOOD SECURITY

"Food security implies access by all people at all times to sufficient quantities of food to lead an active and healthy life." As noted by P.V. Srinivasan, this requires not just **adequate supply of food** at the aggregate level but also **enough purchasing capacity** with the individual/household to demand adequate levels of food. As far as the question of 'adequate supply' is concerned, it involves two dimensions: (i) the quantitative dimension (in the sense that the overall food availability in the economy should be sufficient to meet the demand), and (ii) the qualitative dimension (in the sense that the nutritional requirements of the population are properly looked after). As far as the question of 'enough purchasing capacity' is concerned, it involves the introduction of employment generation programmes so that the income and purchasing power of the people increases. To tackle the quantitative and qualitative aspects of the food security problem, the Government of India has relied on the following three **food-based safety nets:** (1) public distribution system (PDS), (2) integrated child development services (ICDS) and (3) mid-day meals programme (MDM). As far as the issue of providing purchasing power to the people is concerned, various employment programmes have been introduced from time to time. Our focus of discussion in this chapter is on food-based safety nets. Even amongst these, since PDS has been the focus of most of the attention and debate over the years, a major part of this chapter is devoted to its discussion.

The Nature of the Problem

The Quantitative Aspect. Because of chronic food shortages that the country faced in the years following Independence, the focus of food policy was to achieve self-sufficiency. As stated on 'Agricultural Inputs and Green Revolution,' the period after the Third Plan has been marked by rapid strides in foodgrains production (particularly wheat and, in recent years, rice as well). This has enabled the economy to overcome the problems of foodgrains shortages and build up large stocks of foodgrains to counter any scarcity conditions. In fact, as noted by R. Radhakrishna, India achieved self-sufficiency in foodgrains in the 1970s and has sustained it since then. It improved its capacity to cope with year-to-year fluctuations in food production by building up large buffer stocks through the agency of FCI (Food Corporation of India) and supplying these stocks to the people through the PDS. During some of the recent years, the buffer stocks considerably exceeded the minimum norms causing the problem of 'excess stocks'. In January 2012, the central pool had wheat stocks of 25.7 million tonnes and rice stocks of 29.7 million tonnes making for a total of 55.4

million tonnes (compared with 35.8 million tonnes in January 2009). The stocks of both the grains were much higher over the buffer stock norm for the period — 11.2 million tonnes for wheat and 13.8 million tonnes for rice.

While the foodgrains stock position thus looks satisfactory at present, there are some issues of concern. Analysts point out that while population growth and shift in food habits away from coarse grains with the rise in incomes, will push up the consumption of wheat considerably in years to come (to about 90 million tonnes in 2014-15), the production is not likely to rise as neither area under wheat is likely to increase nor are any further increases in productivity in evidence (in fact, wheat productivity was 2,778 kgs. per hectare in 1999-2000, and 2,938 kgs per hectare in 2010-11). As far as rice is concerned, its production in recent years has been more than consumption except 2002-03. However, rice output has not grown strongly with yields stagnating at around 2,000 kgs per hectare since the late 1990s. Accordingly, many observers believe that rice production is also beginning to plateau. As far as vegetable oils and pulses are concerned, India already imports their large quantities.

The Qualitative Aspect. Even more worrisome is the qualitative aspect of the problem as the following facts clearly bring out:

1. According to the Global Hunger Index 2011, released in October 2011, India ranks an abysmal 67 in a group of 122 developing countries — way below neighbouring countries like China (rank 4) and Pakistan (rank 59). Only Bangladesh has worse levels of hunger than India in South Asia. Even Nepal ranks higher at 54 while Sri Lanka's rank in 36.8
2. India's hunger index score for 2011 was 23.7 which indicates an 'alarming' situation (countries with index value between 20 and 29.9 fall in the category of countries having an alarming condition).
3. According to the World Food Programme, nearly 50 per cent of the world's hungry live in India.
4. About 35 per cent of India's population — over 350 million is food-insecure, consuming less than 80 per cent of the minimum energy requirement.
5. Nearly 9 out of 10 pregnant women between 15 and 49 years are malnourished and anaemic.
6. Anaemia in pregnant women causes 20 per cent of infant mortality.
7. 46 per cent of children under five were malnourished in 2006. The rate has improved by just one per cent in a decade but is still worse than the least developed countries where the figure is 35 per cent.
8. Of the 9.7 million total deaths of children under five worldwide, 2.1 million deaths were in India in 2006. In other words, India contributed 21.6 per cent of total deaths in the world below 5-years group.
9. Malnutrition accounts for 50 per cent of under-five deaths.
10. Of the 19 million infants with low birth weight in the developing world, 8.3 million come from India, where underweight prevalence rate is 43 per cent.
11. About one-third of underweight children under five live in India (54.6 million out of 156 million): Madhya Pradesh, Bihar, Jharkhand, Gujarat, Orissa, Chattisgarh, Meghalaya and Uttar Pradesh are the worst offenders.
12. Percentage of children suffering from anaemia is 77. In other words, three out of four children in India are anaemic.
13. Percentage of stunted children is 37, i.e., one out of three children has stunted growth.
14. Percentage of children not fully immunised is 51.

4.2.2 PUBLIC DISTRIBUTION SYSTEM IN INDIA

Let us now turn to a discussion of the PDS (Public Distribution System) in India. As stated earlier, this has been the most important food based safety net introduced by the Government of India.

Objectives and Expansion of PDS

The basic objective of the public distribution system in India is to provide essential consumer goods at cheap and subsidised prices to the consumers so as to insulate them from the impact of rising prices of these commodities and maintain the minimum nutritional status of our population. To run this system, the government resorts to levy purchases of a part of the marketable surplus with traders/millers and producers at procurement prices. The grain (mainly wheat and rice) thus procured, is used for distribution to the consumers through a network of ration/fair price shops and/or for building up buffer stocks. In addition to foodgrains, PDS has also been used in India for the distribution of edible oils, sugar, coal, kerosene and cloth. The most important items covered under PDS in India have been rice, wheat, sugar and kerosene. Coarse grains (jowar, bajra, maize etc.) virtually do not figure in the PDS as their combined sales have amounted to less than 1 per cent of the total PDS sales. Pulses, which constitute an important source of protein for the poor, have had a share of less than 0.2 per cent in total PDS sales. **PDS in India covers the whole population as no means of direct targeting are employed.** The criterion is to issue ration cards to all those households that have proper registered residential addresses. The number of fair price shops (FPS) has increased over the years from 0.47 lakh at the end of 1960 to 3.12 lakh in 1984 and is presently 4.74 lakh. **PDS distributes commodities worth more than ₹ 30,000 crore annually to about 160 million families and is perhaps the largest distribution network of its kind in the world.**

The quantities supplied through the PDS outlets remained below 5 million tonnes upto 1963, and they had gone up to 14 million tonnes by mid-1960s. Throughout the 1970s the quantities remained around 10 million tonnes, and during the 1980s, the average was around 16 million tonnes. The offtake from PDS outlets reached a peak level of 19.0 million tonnes in 1991-92 but, thereafter, tended to decline. In fact, the gap between allocation and offtake from the PDS increased considerably both for rice and wheat but more particularly for wheat. In 1991-92, the combined allocation of rice and wheat under PDS was 21.92 million tonnes while offtake was 19.0 million tonnes. Thus, offtake was 86.7 per cent of allocation. In 2001-02, against the combined allocation of rice and wheat of 30.37 million tonnes under PDS, the offtake was merely 13.84 million tonnes. Thus, offtake was only 45.6 per cent of allocation. This reduced offtake became a serious cause of concern as unsold stocks in the PDS led to heavy handling and storage costs for the government agencies.

The wide gap between allocation and offtake from the PDS noticed in 1990s was basically due to the reason that the issue prices of rice and wheat had been raised substantially with the result that the gap between the open market price and the price charged for supplies through PDS (the issue price) got reduced considerably. For example, the issue price of rice and wheat was revised four times between 1990 and 1994 with the result that the 1994 price level was more than double the price in 1989 for rice and nearly double the 1989 level for superfine rice and wheat. In fact, the differential between market price and PDS price of wheat came down from 47.44 per cent in January 1991 to merely 8.21 per cent in February 1994 in Delhi. The central issue price (CIP) fixed by the government in February 1994 remained unaltered upto May 1997 when a dual pricing structure was introduced under the Targeted Public Distribution System (TPDS). In this system, issue prices for families below the poverty line (BPL) were fixed at 50 per cent of the economic cost while issue prices for families above the poverty line (APL) were fixed equal to the economic cost. Since the issue prices for APL families were very close to the market price, there was no incentive for them to buy from the PDS. Consequently, foodgrain stocks with the government increased considerably. To tackle this problem, the government had to reduce the issue price for APL families by 30 per cent in July 2001. Thus, issue price for APL families was reduced to 70 per cent of economic cost.

State Intervention in Foodgrains and FCI

The main agency providing foodgrains to the PDS is the Food Corporation of India (FCI) set up in 1965. **The primary duty of the Corporation is to undertake the purchase, storage, movement, transport, distribution and sale of foodgrains and other foodstuffs.** It ensures on the one hand that the farmers get remunerative prices for their produce (not less than the support/procurement prices fixed by the government), and on the other hand, the consumers get foodgrains from the central pool at uniform prices (known as issue prices) fixed by the Government of India. The Corporation has also been entrusted with the responsibility of maintaining buffer stocks of foodgrains on behalf of the government. With the increasing production of wheat and rice in recent years and the increasing demands on the PDS, the role of FCI has also increased as it is the sole repository of foodgrains meant for the PDS. FCI has the following achievements to its credit: (i) ever since FCI started its procurement operations, the levels of procurement have increased considerably enabling the government to build up adequate buffer stocks on the one hand, and to meet the requirements of the PDS on the other; (ii) with increase in the domestic procurement of foodgrains by the FCI, dependence on imports of foodgrains has declined considerably enabling the country to save valuable foreign exchange; (iii) since a major part of the FCI's procurement operations is in the nature of price support purchase, the FCI has arrested price declines to unremunerative levels; (iv) by supplying foodgrains through the PDS at 'affordable' prices, the FCI has helped in reducing the inflationary pressures on the one hand, and has enabled the low income groups to meet their foodgrains requirements on the other hand; and (v) the FCI has played an important role in building up scientific storage capacity in the country. This has not only enabled the country to build up buffer stocks, it has also helped in reducing losses on storage.

Flaws in Food Security System

The PDS in India has been criticised on various counts. The main criticisms are as follows:

1. Limited Benefit to Poor from PDS. Many empirical studies have shown that **the rural poor have not benefited much from the PDS as their dependence on the open market has been much higher than on the PDS for most of the commodities.** In a similar way, urban poor have also depended to a substantial extent on the open market to meet their consumption requirements. In a study on the effectiveness of PDS in reaching the poor, Kirit S. Parikh says, "The cost-effectiveness of reaching the poorest 20 per cent of households through PDS cereals is very small. For every rupee spent, less than 22 paise reach the poor in all States, excepting in Goa, Daman and Din where 28 paise reach the poor. This is not to suggest that PDS does not benefit the poor at all, but only to emphasise that this support is provided at high cost." In this context, it would also be pertinent to point out that ration cards are issued only to those households who have proper registered residential addresses. This means that a large number of poor who are homeless and others without proper residential addresses (for example, migrant labourers) are automatically left out of the food security system.

Using 1986-87 household level data, Radhakrishna, K. Subbarao, S. Indrakant and C. Ravi estimated the extent of income transfer through PDS to the poor, and the consequent reduction in poverty in terms of percentage and severity. They concluded that there were negligible welfare gains due to PDS. The per capita income gain to the poor from all consumer subsidies was no more than ₹ 2.01 per month, or 2.7 per cent of their per capita expenditure, in rural areas. The overall transfer gains were very meagre. Not only this, the transfers were regressive, i.e., non-poor cornered greater benefits. **With the exception of Kerala and Andhra Pradesh, PDS also had a negligible effect on poverty and nutritional status.** Considering the country as a whole, there was a reduction of barely 2 percentage points in the poverty ratio due to combined incidence (income gains) of food and non-food consumer subsidies.

In a study published in 2002, R. Radhakrishna made the following important observations as far as access of the poor to PDS food is concerned: (i) many empirical studies have shown severe biases in the inter-regional distributions

of the PDS supplies — States with high incidence of poverty such as Bihar, Orissa and Madhya Pradesh received a lower share; and (ii) the PDS is not functioning at all in the States with high concentration of the poor, due to a lack of the desired initiative on the part of the State governments. The prospects of these States in providing safety nets to the poor on the basis of spending from their own resources would seem to be bleak since they are facing a severe fiscal crunch. Even the TPDS (Targeted Public Distribution System) introduced in 1997, has not made a significant impact on the access of food since delivery systems in the poorer States are weak.

2. Regional Disparities in PDS Benefits. There are considerable regional disparities in the distribution of PDS benefits. For example, in 1995, the four Southern States of Andhra Pradesh, Karnataka, Kerala and Tamil Nadu accounted for almost one-half (48.7 per cent) of total PDS offtake of foodgrains in the country while their share in all India population below the poverty line in 1993-94 was just 18.4 per cent. As against this, the four Northern States of Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh (or BIMARU States) having as much as 47.6 per cent of the all-India population below the poverty line in 1993-94 accounted for just 10.4 per cent of all India offtake of foodgrains from PDS in 1995. A more accurate picture of differences across States and regions emerges when we examine the distribution of per capita quantities, that is, after adjusting for population size. A study published in 2005 has shown that in poor States like Bihar, Madhya Pradesh, Uttar Pradesh and Rajasthan with a high incidence of poverty, the per capita monthly purchases of cereals from PDS was less than half a kg while it was 4.6 kg in Kerala, 3.3 kg in Tamil Nadu and 2.3 kg in Andhra Pradesh which have a low incidence of malnutrtion.

3. The Question of Urban Bias. A number of economists have pointed out that **PDS remained limited mostly to urban areas for a considerable period of planning while the coverage of rural areas was very insufficient.** In fact, in an article published in 1984, P.S. George estimated that the offtake in the urban areas was about 85 per cent of the total offtake from the public distribution system. However, using data available from the 42nd round of NSS, S. Mahendra Dev and M.H. Suryanarayana indicated that for most of the States, with the exception of West Bengal, the urban bias may not be present. In fact, based on certain criteria they argued that the PDS is rural biased at the all-India level for rice and coarse cereals.

Although the above results seem mutually contradictory, the fact of the matter is that there was indeed an urban bias in PDS in the 1960s and 1970s as its coverage was confined to major cities and a few States. However, with the expansion of PDS in rural areas in later period, this bias has been corrected. Nevertheless, the mere expansion of PDS in rural areas does not mean that it is "effective" in delivering the goods. In fact, a report released by the Government of India in 1991 pointed out that while more than 75 per cent of the fair price shops are in rural areas, "the level of their effectiveness in terms of actual supply of essential commodities, particularly in the rural, backward, remote and inaccessible areas, raises questions as to the meaningfulness of their existence."

4. The Burden of Food Subsidy. PDS is highly subsidised in India and this has put a severe fiscal burden on the government. Subsidy on PDS arises from the difference between the issue price and the economic cost of the FCI. **From ₹ 662 crore in 1980-81, food subsidy rose to ₹ 2,850 crore in 1991-92, ₹ 62.930 crore in 2010-11 and further to ₹ 72,823 crore in 2011-12.** While the economic cost of FCI is going up considerably due to the regular hikes in procurement prices, rising costs of storage and distribution etc., the issue prices are deliberately kept low by the government in order to supply foodgrains to the masses at low prices. In 1997, the government adopted the Targeted PDS in which issue prices for BPL families were fixed at 50 per cent of the economic cost of FCI while the issue prices for APL families were fixed equal to the economic cost. The drastic reduction in the issue prices for BPL families raised the subsidy burden considerably. On the other hand, fixation of issue prices at a level equal to the economic cost for APL families created a situation where APL price under PDS rose higher than the market price reducing the incentive for APL families to purchase from the PDS. As a result, the stocks of foodgrains with the FCI

swelled. This created a problem of excess food stocks. For instance, while the stipulated buffer stocks norm in July 2002 was 24.3 million tonnes, the actual stock stood at 63.0 million tonnes with the result that 'excess stocks' were as high as 38.7 million tonnes. To solve the problem of excess stocks, the issue price for APL families had to be reduced to 70 per cent of economic cost.

5. Inefficiencies in the Operations of FCI. The Bureau of Industrial Costs and Prices (BICP) of the Government of India and some researchers have pointed out a number of inefficiencies in the operations of the Food Corporation of India. **The economic cost of FCI foodgrains operations has been rising on account of increase in procurement prices and 'other costs' (which include procurement incidentals, distribution cost and carrying cost).** For example, the economic cost of rice procurement went up from ₹ 497 per quintal in 1991-92 to about ₹ 2,000 per quintal in 2010-11. During the same period, the economic cost of wheat procurement rose from ₹ 391 per quintal to about ₹ 1,500 per quintal. Critics have pointed out that the way out of this malaise is the entrust the task of procurement and distribution of foodgrains to private agents in place of the FCI as they are likely to operate more efficiently.

However, as correctly pointed out by V.M. Rao, the food security system as has evolved in India over the past four and a half decades can be operated only by a FCI-like organisation. The surpluses of wheat and rice (the crops to which the food security system in India is limited) are concentrated only in a few States and thus the procurement operations are also concentrated in these States. Given the minimum support prices which remain fixed for a crop year, the farmers take the first opportunity to deliver their produce when harvesting starts except when a substantial rise in the price of grain is expected in the later part of the season. The quantities of grains thus mobilised have to be allocated to areas all over for country maintaining a steady flow of monthly installments of grains supplied at a subsidised price. Obviously, this has to be a command operation which private trade channels working for profit are not likely to find sufficiently attractive to undertake. The inefficiencies in the operations of FCI are due to its "highly centralised and bureaucratic mode of operation." To rectify this, V.M. Rao advocates the 'toning up' of the personnel and working of FCI on the one hand, and reorganising the food security system on a decentralised basis on the other hand.

6. PDS Results in Price Increases. Some economists have pointed out that **the operations of the PDS have, in fact, resulted in an all-round price increase. This is due to the reason that large procurement of foodgrains every year by the government actually reduces the net quantities available in the open market.** Taking advantage of the low supplies in the market, the traders have indulged in speculation raising the foodgrains prices in the open market to unusually high levels. This dual market system — the PDS and the open market — operates to the disadvantage of the poor. As noted earlier, the PDS meets only a fraction of the requirements of the poor. Therefore, they are compelled to make purchases in the open market where prices are high. Thus, PDS not only does not meet significant requirements of the poor but also operates against their interest by pushing up the open market prices. People not serviced by the PDS at all like casual labourers on daily wages, migrant workers, and those without proper residential addresses are doubly disadvantaged because they are not only not covered by the PDS but also have to pay higher prices for their entire purchases in the open market.

7. Leakages from PDS. Another criticism of PDS relates to the **problem of leakages from the system in the form of losses in the transport and storage and diversion to the open market. The major part of the leakage is due to diversion of foodgrains to the open market because of the widespread prevalence of corrupt practices.** Instead of selling ration at subsidised rates, shopkeepers sell them in the open market at higher prices, pocketing the difference. According to a study conducted by Tata Consultancy Services, the all-India diversion of PDS foodgrains is 31 per cent for rice and 26 per cent for wheat. Sometimes, shopkeepers make bogus entries in the ration cards. S. Mahendra Dev gives the example of a village in Dahanu taluka in Maharashtra where the tribals had not even tasted sugar for more than a year. Yet, the ration card of one undernourished tribal family had an entry for June 1995 stating

that it had bought 26 kgs of sugar on a single day. The situation is similar in other Dahanu villages. The delivery systems in rural areas are very poor. Even if the fair price shop exists, foodgrains are not available in many places.

4.2.3 TARGETED PUBLIC DISTRIBUTION SYSTEM (TPDS)

With a view to reducing the burden of food subsidy and targeting it better to the really needy people, the Government of India adopted the Targeted Public Distribution System (TPDS) from June 1, 1997. **TPDS aims at providing foodgrains to people below the poverty line at highly subsidised prices from the PDS and foodgrains to people above the poverty line at much higher prices. Thus, the TPDS adopted by the Government of India maintains the universal character of the PDS but adds a special focus on the people below the poverty line (known as BPL).**

The key features of TPDS as adopted by the Government of India are as follows:

1. Targeting. The most distinctive feature of the TPDS in relation to the previous policy is the introduction of targeting by dividing the entire population into below poverty line (BPL) and above poverty line (APL) categories, based on the poverty line defined by the Planning Commission. **The maximum income level for the population to be covered under BPL was kept at ₹ 15,000 per annum**. Initially a quantity of 10 kg of foodgrains per household per month was approved. Later on, this was raised to 25 kg per month. On April 1, 2002, the government raised this further to **35 kg per household per month.**

2. Dual (multiple) prices. The second distinguishing feature is that the PDS now has dual central issue prices: prices for BPL consumers and prices for APL consumers. A third price, introduced in 2001, is for beneficiaries of the Antyodaya Anna Yojana (AAY). In March 2000, a major policy change occurred when it was announced in the Budget that central issue prices — that is, prices at which the Food Corporation of India sells grains for the PDS to State governments will be set at 50 per cent of the 'economic cost' of FCI for BPL families and at 100 per cent of the 'economic cost' for APL families. Because of the high prices for APL families, many of them stopped purchasing from PDS resulting in heavy build-up of stocks with FCI. Consequently, prices for APL families were reduced. **The Central issue prices (unchanged since July 1, 2002) are as follows: (i) ₹ 6.10 per kg of wheat and ₹ 8.30 per kg of rice for APL families; (ii) ₹ 4.15 per kg of wheat and ₹ 5.65 per kg of rice for BPL families; and (iii) ₹ 2 per kg of wheat and ₹ 3 per kg of rice for families covered under AAY.** Presently 2.43 crore poorest of the poor families in the BPL category are covered under AAY.

3. Centre-State Control. A third important feature of the TPDS is that it has changed Centre-State responsibilities with respect to entitlements and allocations to the PDS. PDS was and is designed and managed by State governments, and State governments differ with respect to entitlements, the commodities offered, the retail price (State issue price) and so on. In the past, the State governments demanded a certain allocation from the Central pool, and based on certain factors, most importantly, past utilisation and the requirements of statutory rationing, the Central government allocated grain and other commodities to States for their public distribution systems. **With the TPDS now, the size of the BPL population and the entitlement for the BPL population are decided by the Central Government.** And the allocation for APL families or additional allocations for BPL and APL families are decided somewhat arbitrarily based on past utilisation and demands from States and, according to the TPDS guidelines, are meant to be transitory.

Total number of families covered under BPL and AAY is presently 6.52 crore. Allocations of foodgrains are made to these families at the rate of 35 kg per family per month. For APL families, allocation varies from 15 kg per month to 35 kg per month in different States. During the year 2011-12, the Government released a quantity of 614.69 lakh tonnes of foodgrains: 438.65 lakh tonnes as normal TPDS allocation covering AAY, BPL and APL families; additional

allocation at 123.67 lakh tonnes; and 49.05 lakh tonnes allocated for welfare schemes such as Mid-day Meals Scheme, Wheat-based Nutrition Programme under the Integrated Child Development Scheme (ICDS), Annapurna, etc.

Review of TPDS

TPDS has been criticised on the following grounds:

1. Targeting. The major criticism of TPDS is that it has led to the large-scale exclusion of genuinely needy persons from the PDS. In this context, Madhura Swaminathan discusses two types of issues — (i) conceptual issues, and (ii) operational issues. The first concern 'the definition of the poor' and the second concern 'identification of poor in practice.' Both these issues are very important and crucial to the working of the TPDS as its very success hinges on the inclusion of genuinely needy persons under the programme.

(i) Conceptual issues: Definition of poor. The main issue here in how appropriate is the definition of poor applied in the TPDS? **The current definition of eligibility for BPL status is based on the official poverty line as estimated by the Planning Commission in 1993-94 (adjusted for population levels in 2000).** If we use the income poverty line, then the target group comprised 37 per cent of the rural population and 32 per cent of the urban population in 1993-94. However, the official poverty line represents a very low level of absolute expenditure. Low and variable incomes imply that a much larger section of the population is vulnerable to income shortfalls than observed by means of a static poverty line. Madhura Swaminathan has shown that **if alternative criteria like nutritional status or food share are considered, the number of poor who should be granted the BPL status would be much larger than what the income poverty line estimates**.

(ii) Operational issues: Identification in practice. Even if the income poverty line is a conceptually suitable criterion, a lot of problems have to be confronted in identifying households on the basis of the criterion at the ground level as we do not have any estimate of the actual incomes of households. This is quite natural because in a country where the majority of the population works in the informal sector and receives income on an irregular basis, income is very difficult to measure.

The fact of the matter is that **the whole process of identification of BPL families in many States has been carried out in a very arbitrary manner. As a result, there have been large errors of misclassification with genuinely deserving households excluded and some affluent households included in the BPL category**. Calculations based on NSS (2007) by Peter Svedberg show that in 2004-05 (the last year for which comprehensive data are available), almost two-thirds (63 per cent) of the poor households were not covered by the system, indicating a substantial systemic exclusion error. About 62 per cent of all BPL and AAY cards were in the hands of non-poor households, suggesting a large systemic inclusion error. High exclusion errors mean a low coverage of BPL households. High inclusion errors implies that the APL households receive an unacceptably large proportion of subsidised grains. A recent study conducted by NCAER has put the number of 'ghost' public distribution cards at a staggering 2.3 crore and what is even more damning, revealed that as many as 1.21 crore 'deserving' poor have been left out of the food security umbrella. The report also found that the rich have been given the lowest income group ration cards-AAY cards in 70 per cent of the cases in the North-East and in 30-35 per cent of the cases in other States. In her fieldwork in Bihar, Jos Mooij has discovered that there are many poor people who never received the BPL ration card. As per official guidelines, the task of identification of BPL families is to be carried out by Gram Panchayats and Gram Sabhas. However, in Bihar, these institutions are, more or less, non-functional. Therefore, ration cards for BPL families have been sent to the district magistrates who have, in turn, passed them on to the sub-divisional officers, who have given them to lower rank officers, and finally in many places the cards were given to the PDS dealers to distribute. It is, hence, not surprising that many of them have kept a considerable part of the cards themselves.

To sum up, **given the problems both at the conceptual level and operational level in identifying households below the poverty line, the chances of mis-identification and excluding the vulnerable population from the TPDS are very high**.

2. Leakages and diversion. Not only do a huge number of fake cards point to diversion of the PDS subsidised grain, but the leaking system is bypassing those who are in dire need of State support. In the Eleventh Five Year Plan document, the Planning Commission presented estimates of leakages at three points in time — 1993-94, 1999-2000 and 2004-05. In 1993-94 and 1999-2000 leakages from the system were 28 per cent which rose considerably to 54 per cent in 2004-05. For instance, in 2004-05, consumers are reported to have bought 13.53 million tonnes in the fair price shops, out of which 4.6 million tonnes were bought by poor households. In the same year, 29.65 million tonnes of rice and wheat were taken off the Central Pool for TPDS cardholders, including APL. Hence, **more than half (54 per cent) of the grain taken off for TPDS disappeared before it reached buyers in the fair price shops.**

Moreover, as pointed out by Peter Svedberg, the estimated 4.6 million tonnes of TPDS grains purchased by poor households — with or without BPL or AAY ratio cards — corresponds to 15.5 per cent of the total off-take of TPDS grains (29.65 million tonnes). **This means that for each kg of subsidised grains bought by the poor, the offtake from the central pool was 6.4 kg.** The fact that half the TPDS grains is leaked before reaching consumers reflects inefficiency, corruption and theft on a gigantic scale.

3. Late and irregular arrival of grains in fair price shops. According to Jos Mooij, PDS commodities arrive late and irregular at the fair price shops if at all. The villagers are poorly informed, and certainly not in advance. This means that when foodgrains arrive in the shop, the poorest among the poor may not have sufficient cash readily available to purchase them. The PDS dealer will only transport so much as he expects to sell within one or two days. "In short, there is a physical access problem, in the sense that the commodities may come with irregular intervals or not at all. There is also a problem of economic access, in the sense that the poorest people do not have cash ready at the moment stocks arrive."

4. No variation in purchase across expenditure groups. To assess whether TPDS has really succeeded in targeting the poor people, we need to examine the purchase from the PDS by households in different expenditure groups. A successful targeting can be said to be one in which quantity purchased from the PDS declines systematically with increase in expenditure class. The Indian TPDS fails this test miserably. In many States, the data do not show any variation in purchase across expenditure groups. Kerala is an exception as exclusion of the upper expenditure groups appears to be taking place. Some successes in this regard have been reported from certain areas in Andhra Pradesh and Karnataka as well. On the basis of comparative studies of NSS data from the 50th round (for 1993-94) and 55th round (for 1999-2000), Madhura Swaminathan concludes that TPDS did not make much of difference to the States where the PDS was not functioning well prior to its introduction. In States like Kerala and Andhra Pradesh where the PDS was functioning well, the TPDS has perhaps excluded some persons from the highest expenditure group but, on the whole, the level and pattern of purchase has not changed much.

5. Decline in offtake and the question of viability of fair price shops. As noted earlier, there was a steep decline in offtake from the PDS in 1990s. The combined offtake of rice and wheat which was 86.7 per cent of allocation in 1991-92 fell to 70.4 per cent in 1999-2000 and to only 45.6 per cent in 2001-02 (there has been improvement in later years and offtake was as high as 90.6 per cent of allocation in 2004-05). The main factor in the decline in offtake was the total collapse in demand for grain from APL consumers as the price differential between issue prices for APL families and the open market prices had considerably narrowed down. This fall in offtake of APL families from the PDS, in turn, adversely affected the viability of the fair price shops. With a small number of ration cards to serve, and upper bounds on margins that can be charged to BPL consumers, the net profits of fair price shop owners/dealers declined. As a result, many ration shops became unviable.

6. TPDS has failed in transferring cereals from surplus to deficit regions. According to Madhura Swaminathan, TPDS has failed in the regional task that was performed by the earlier PDS, namely of transferring cereals from surplus to deficit regions of the country. Historically, PDS supply and offtake were higher in the Southern States as well as in the West, the North-East, the Hill States and the Islands. The areas where PDS offtake was relatively high were not only deficient in terms of cereal production but also tended to be areas of low cereal consumption. The policy of targeting and allocation of grain on the basis of the income poverty line has worked against the earlier objective of price stabilisation through grain movements across the country. Madhura Swaminathan has specifically illustrated this point with reference to Kerala which had the most effective PDS networks in the pre-TPDS period with as many as 95 per cent of all households covered by the PDS. Since Kerala is a food deficit State, PDS proved to be an effective conduit for transferring cereals to this State from cereal surplus States. Now with TPDS, Kerala is facing many problems. The guaranteed and subsidised allocation of grain for BPL households under TPDS accounts for only 10 per cent of the previous PDS supply. If the allocation to the APL families is stopped, then it is estimated that the PDS allocation to Kerala will account for just 3.8 per cent of the grain requirements of the State.

7. Burden of subsidy has increased. While one of the basic objectives of TPDS was to reduce the burden of food subsidy, it has in effect achieved just the opposite — the burden of food subsidy has increased. This is on account of various reasons: (i) non-exclusion of APL families from the TPDS; (ii) low-offtake from the PDS by APL families which increased the stocks with the FCI forcing upon it costs of handling and storage etc.; and (iii) low prices for BPL families. Introduction of Antyodaya Anna Yojana in 2001 which envisages the supply of wheat and rice at only ₹ 2 per kg and ₹ 3 per kg respectively to the poorest 2.5 crore BPL families has pushed up the burden of subsidy further. As stated earlier, the burden of food subsidy was as high as ₹ 72,823 crore in 2011-12.

A Programme Evaluation Organisation (PEO) Study (2005) points out another important fact. According to this study, during 2003-04, out of an estimated subsidy of ₹ 7,258 crore under TPDS, ₹ 4,123 crore did not reach BPL families. Morever, ₹ 2,579 crore did not reach any consumer but was shared by agencies involved in the supply chain.

The above discussion shows that **the TPDS has failed on many counts. It has failed to reach the genuinely needy and failed to provide them adequate food at a reasonable price. It has failed to reduce the burden of food subsidy. It has weakend the entire food delivery system and adversely affected the viability of fair price shops. It has also weakened the pattern of grain allocation across States and thereby weakened the transfer of grain from areas of surplus production to areas of deficit production and low consumption. Moreover, it has increased the incentives for leakages and malpractices and, hence, corruption**.

Because of the above criticisms of TPDS, **many economists in recent times have advocated the dismantling of the entire structure and giving cash transfers to the poor.** For instance, a panel headed by Planning Commission deputy chairman Montek Singh Ahluwalia has, in a Report submitted in March 2011, recommended that rather than foodgrains, the poor in India should get money in an electronic account every month and should have the freedom to buy food of their choice from the fair price shops. The Committee has recommended that in the first week of every month, the Government directly transfer the subsidy amount to a unique identification (UID) or Aadhaar number-linked smart card, to be in the name of a woman family member above 18 years of age. The subsidy would be the difference between the minimum support price (MSP) for the foodgrain and the PDS shop price. This would mean a BPL family would get ₹ 280 to ₹ 300 under the existing PDS of 35 kg of foodgrain per family per month at ₹ 5.50 for a kg of rice or ₹ 4.15 for a kg of wheat. If the National Advisory Council's formulation of 35 kg at ₹ 1 for millets, ₹ 2 for wheat and ₹ 3 for rice is considered, the monthly subsidy would range between ₹ 300 to ₹ 350. A BPL cardholder would be allowed to either lift his or her quota of subsidised foodgrains or will have the choice to buy any other food- stuff. The card will function only at fair price shops, thus preventing withdrawal of money. According to Ahluwalia, "Giving choice to beneficiaries will empower them. It will also help plug leakages."

However, as correctly pointed out by Himanshu, **cash transfers cannot serve any purpose in the case of large-scale deficits of basic services.** They can help in creating demand for basic services but can work only when these services have been provided universally and efficiently. "In other words, the saturation in the supply of basic services is a precondition for cash transfers to work. Such transfers are neither a solution to nor a substitute for the lack of supply of essential services. Their role is to ensure access to basic services for those households that are unable to access them because of extraneous reasons". **At high levels of malnutrition, cash transfers cannot substitute the essential role that the PDS plays.**

National Food Security Bill

The National Advisory Council (NAC) submitted its final proposals on Draft National Food Security Bill in January-February 2011. The objective of the proposed National Food Security Act (NFSA) is to ensure "public provisioning of food and related measures, to enable assured economic and social access to adequate food with dignity, for all persons in the country, at all times, in pursuance of their fundamental right to be free from hunger, malnutrition and other deprivations associated with the lack of food and related matters." **The NAC recommends the shifting from household food entitlements to individual food entitlements.** It presents two arguments in favour of this. First, per capita entitlements are 'fairer': households with more members will be entitled to more food. Second, per capita entitlements would do away with the need for a precise definition and identification of 'households', which tends to be difficult and prone to manipulation.

The government introduced the National Food Security Bill in the Lok Sabha in December 2011. The main highlights of the Bill are given in Box 1.

Box 1: National Food Security Bill

The National Food Security Bill was introduced in the Lok Sabha on December, 22, 2011. As per the provisions of the Bill, it is proposed to provide 7 kg. of foodgrains per person per month belonging to priority households at prices not exceeding ₹ 3 per kg of rice, ₹ 2 per kg of wheat, and ₹ 1 per kg of coarse grains and to general households not less than 3 kg of foodgrains per person per month at prices not exceeding 50 per cent of the MSP for wheat and coarse grains and derived MSP for rice. It will benefit up to 75 per cent of rural population (with at least 46 per cent belonging to priority households), and up to 50 per cent of urban population (with at least 28 per cent belonging to priority households), besides providing nutritional support to women and children and meals to special groups such as destitute and homeless, emergency and disaster affected, and persons living in starvation. Pregnant and lactating mothers will also be entitled to maternity benefit of ₹ 1,000 per month for six months. In case of non-supply of foodgrains or meals, entitled persons will be provided food security allowance by the concerned State/Union Territory governments. Provisions for reforms in the TPDS such as doorstep delivery of foodgrains, application of information and communication technology (ICT) including end to end computerisation, leveraging 'aadhar' for unique identification of beneficiaries have also been made in the bill. Provisions have also been made for transparency and accountability including disclosure of records relating to the PDS, social audits, and setting up of vigilance committees besides an elaborate grievance redressal mechanism.

Source: Government of India, *Economic Survey,* 2011-12 (Delhi, 2012), Box 4, p. 199.

4.2.4 ICDS AND MID-DAY MEAL SCHEME

Integrated Child Development Services

Integrated Child Development Services (ICDS) launched in 1975 is a centrally sponsored scheme implemented by the Ministry of Human Resource Development. The Central Government is responsible for programme planning and operating costs while State governments are responsible for programme implementation and providing supplementary nutrition out of their own resources. ICDS integrates supplementary nutrition with primary health care and informal

education. **It is one of the largest child intervention programmes in the world with a holistic package of six basic services for children upto 6 years of age, and for pregnant and nursing mothers**. These services are: (1) supplementary feeding (the ICDS provides to a child food ration for 300 days, containing 500 calories and 12-15 gms protein and to pregnant and lactating women food ration containing 600 calories and 18-20 gms protein); (2) immunisation; (3) health check-ups; (4) referral services; (5) health and nutrition education to adult women; and (6) non-formal pre-school education to 3-6 years old. The programme is implemented through a chain of projects, each of which is located at a community block covering around 1,00,000 population in rural and urban areas and 35,000 population in tribal areas. The ICDS project located at a community block targets to provide food supplement to 40 per cent of 17,000 children aged under six years and 40 per cent of the pregnant and lactating women. ICDS is being implemented through one platform, *i.e.*, ***anganwadi*** centre (or child care centre). The staff includes CDPO (Chief Development Project Officer), supervisors, anganwadi workers and helpers.

Expansion of ICDS. Starting with a modest 33 blocks/projects and 4,891 anganwadi centres (AWCs), ICDS was continuously expanded and has now been universalised with the Government of India cumulatively approving 7,076 projects and 14 lakh AWCs including 20,000 anganwadis 'on-demand'. Apart from universalising the ICDS scheme, the government has taken various steps, such as revision in financial norms of existing interventions including the Supplementary Nutrition Programme (SNP), revision in nutritional and feeding norms of supplementary nutrition, and introduction of new WHO growth standards. In addition, the Government of India also introduced cost-sharing between the Centre and States from 2009-10 in the ratio of 90:10 for all components including the SNP for the north-east. This ratio will be 50:50 for the SNP and 90:10 for all other components for all States other than north-east. Alongside gradual expansion of the scheme, its budgetary allocation has also increased. The Annual Plan Outlay for 2011-12 for the ICDS was ₹ 14,048 crore against which an amount of ₹ 10,750 crore was released to States/Union Territories up to December 31, 2011. There were 6,779 ICDS projects and 12.96 lakh AWCs operational as on November 30, 2011.

Mid-day Meal Scheme

The national programme of nutritional support to primary education, commonly known as the mid-day meal (MDM) scheme launched in 1995, is a nationwide Central scheme intended to improve the enrollment and regular attendance and reduce dropout in schools. It is also intended to improve the nutritional status of primary school children. **MDM is the world's largest school feeding programme reaching out to about 11 crore children in over 12 lakh schools (EGS) centres across the country.** The scheme is being implemented in all States and Union Territories. In order to improve the quality of meal and ensure better infrastructural facilities, the scheme has been revised many times over the years. As envisaged in September 2004, the scheme aimed at providing cooked mid-day meal with 300 calories and 8-12 grams of protein to all children studying in classes I-IV in Government and aided schools and alternate and innovative education centres. In addition to free supply of foodgrains, the scheme provided Central Assistance for: (i) cooking cost at the rate of ₹ 1 per child per school day, (*ii*) transport subsidy of ₹ 100 per quintal for special category States and ₹ 76 per quintal for other States, (iii) management, monitoring and evaluation costs at the rate of 2 per cent of the cost of foodgrains, transport subsidy and cooking assistance, and (iv) provision of mid-day meal during summer vacation in drought affected areas. In July 2006, the scheme was revised and assistance for cooking cost was raised to ₹ 1.80 per child per school day for north-eastern States and to ₹ 1.50 per child per school day for other States. In October 2007, the scheme was extended to cover children in upper primary (classes VI to VIII) initially in 3,479 Educationally Backward Blocks (EBBs). **From 2008-09, i.e., with effect from April, 2008 the scheme covers all children studying in Government, Local Body and Government-aided primary and upper primary schools and the alternate and innovative education centres including Madersa and Maqtabs supported under SSA (Sarva Shiksha Abhiyan) of all areas across the country.** The calorific value of a mid-day meal at upper primary stage has been fixed at a minimum of 700 calaries and 20 grams of protein by providing 150 grams of foodgrains (rice/

wheat) per child per school day. The cooking cost was raised for primary to ₹ 2.29 per child per day and ₹ 4.03 for upper primary children from April 1, 2010. Recognising the need for appropriate infrastructure, assistance for construction of 94,500 kitchen-cum-stores was sanctioned for the first time to States in 2006-07 (Budget Estimates). A common unit cost of construction of kitchen shed at the rate of ₹ 60,000 for the whole country was adopted. Since this was impractical and inadequate, the cost of construction of kitchen-cum-store is now determined on the basis of plinth area norm and State Schedule of Rates. The allocation for MDM scheme was ₹ 5,348 crore in 2006-07 which was raised to ₹ 9,440 crore in 2010-11. Against this budget allocation of ₹ 9,440 crore, the actual expenditure incurred was ₹ 9,128 crore in 2010-11 from the MDM scheme.

The performance of mid-day meal scheme has varied across States. In Uttar Pradesh, because of powerful food mafias and corrupt officials, there has been very poor implementation. However, in Tamil Nadu, it has proved to be quite a success. Introduced way back in 1982, the scheme — called Free Noon Meal Scheme (FNMS) — currently covers 17.26 lakh children between the ages of 6 months and 5 years. Currently, the scheme is being implemented in 41,344 schools covering 58.76 lakh children upto the tenth grade. The FNMS has helped improve the nutritional status of children considerably, from 41.40 in 1992-93 to 61.45 in 2005-06, and severe malnutrition has been reduced from 0.45 per cent in 1999 to 0.07 per cent in March 2006. The infant mortality rate has also dropped from 53 per 1000 live births in 1998 to 42 in 2003. Under the directions of the Supreme Court, private sector has also been involved in the scheme in various States. Thousands of women in gram panchayats are cooking and serving hot food to children in their villages in these States. This has not only helped to feed children with quality meals cooked and served piping hot during their lunch break but has also led to women empowerment.

A Critical Appraisal of ICDS and Mid-day Meal Scheme

Three National Family Health Surveys were carried out between 1992 and 2006. All these consistently bring out that the nutritional status of children in India is abysmal. Moreover, there does not seem much improvement over time. For instance, the percentage of undernourished children was 45.5 according to NFHS-II (1998-99) and 42.4 according to NFHS-III (2005-06). The percentage of wasted children according to NFHS-II was 15 and according to NFHS-III it was 17. In 1998-99, 73 per cent children suffered from anaemia and in 2005-06, 77 per cent children suffered from anaemia. There are many reasons for the dismal performance of ICDS as the following discussion brings out:

1. The overall impact of ICDS on malnutrition has remained very limited due to a meagre allocation of resources to this programme and faulty project design.
2. The programme is regressively distributed between the States. The States with a high degree of malnutrition like Bihar, Madhya Pradesh and Uttar Pradesh have a relatively low coverage. Results for Uttar Pradesh presented by NFHS-III and reproduced earlier show that 52 per cent of children under 3 years of age in this State are undernourished and the prevalence of stunting, wasting and being underweight is an high as 52 per cent.
3. While ICDS is meant to be a package of 'integrated services' including nutrition services, nutrition counselling, micronutrient supplementation, and antenatal care for pregnant women, in practice the focus has tended to get limited to supplementary nutrition programme (SNP). Further, the main focus of SNP has been on children in the age group of three-six years. Younger children have been comparatively neglected if not excluded. As correctly pointed out by Shanti Ghosh, there is a need to pay more attention to children under the age of three years as this is the critical period in the development of the child, when his or her 'capabilities' (health, nutrition, learning abilities etc.) are largely determined. For example, this is the time when 90 per cent of the brain develops.

4. Tara Gopaldas has pointed to the need to distinguish between overt (or raw) hunger and 'hidden hunger'. The former implies the need to fill the belly every few hours due to the 'pangs of an empty stomach' while the latter implies micronutrient deficiencies such as inadequate intake of iron, calcium, iodine or Vitamin A. The 'hidden hunger' has been neglected in ICDS as it is "not felt, recognised or voiced by the child or her parents." However, it has serious consequences for the child's health.
5. The FOCUS (Focus on Children Under Six) survey carried out in six States in May-June 2004 brought out the fact that health services under ICDS are quite patchy. The main activity in this field is child immunisation and, in this respect, the programme does not seem to play a useful role. For instance, the proportion of children who had never been immunised (among those enrolled in ICDS) was as high as 36 per cent in Rajasthan and 15 per cent in Uttar Pradesh. Pre-school Education (PSE) is another neglected aspect of ICDS with Tamil Nadu being the only exception in the six States covered by the survey.
6. The most serious problem in ICDS relates to 'implementation and accountability'. Since children have no 'voice' in the system, there is no self-correction mechanism whereby implementation failures lead to outspoken protest and timely redressal. As a result, ICDS is poorly implemented and suffers from sheer neglect. For instance, in their study on implementation of ICDS in Bihar and Jharkhand, Nandini Nayak and Naresh C. Saxena have found that in Bihar, 85 per cent of the supervisor posts are vacant, and 18 per cent of the ICDS 'projects' do not have a single supervisor. In Jharkhand, even the post of child development project officer (CDPO, the project incharge) is vacant in about half of the projects. It is difficult to expect anganwadis to provide quality services without any supervision. Moreover, in both Bihar and Jharkhand, the entire staff of ICDS (including CDPOs, supervisors, anganwadi workers and helpers) get their salaries only twice a year. This is a highly demotivating factor for the staff.
7. One of the most important reasons for failure of ICDS and mid-day meal scheme is rampant corruption. The FOCUS report released on December 19, 2006 points out that "rampant corruption, fudged records and bland 'panjiri' (ready-to-eat energy mix)" is the reality of the ICDS. For example, in Uttar Pradesh the government spends ₹ 500 crore a year to procure pushtahar (nutritious food) for distribution among children and pregnant and lactating women living in rural areas through 1.38 lakh anganwadi centres under the ICDS. But the food does not reach most of them. It has been reported that at several places, panjiri meant for mid-day meals is being used illegally to feed the cattle of the rich and influential by the 'panjiri mafia' that controls the supply of nutrition to the poor.
8. Commenting on the functioning of ICDS and mid-day meal scheme, R. Radhakrishna highlights the following shortcomings: (i) irregular supply of food by the State government and reduction in quantity when food is supplied, (ii) irregular supply of medicines, (iii) lack of community participation either in the running or monitoring the functioning of the ICDS, (iv) housing of anganwadi in a dilapidated building located in an unhygienic environment, and (v) Central allocations of foodgrains falling short of the entitlement under the mid-day meal scheme and the State governments not even spending the norm fixed by the Central government for States.

Supreme Court Orders

Since 2001, the Supreme Court has been monitoring the implementation of ICDS in the context of a "Public Interest Litigation" (PIL) on the right to food. In response to this PIL, Supreme Court has been issuing interim orders that reinforce the mandate and importance of ICDS, which had faded somewhat between 1975 and 1990s.

The order dated November 28, 2001 gave an unprecedented boots to ICDS, with the Supreme Court stating that **the scheme must be implemented in full and must be extended to each child, adolescent girl, pregnant woman and nursing mother in India.** The Court further stated that additional supplementary nutrition under the scheme

should be made available to each malnourished child and that every settlement should have an anganwadi. The order states, "We direct the State governments and Union Territories to implement the Integrated Child Development Services (ICDS) in full and ensure that every ICDS disbursing centre in the country shall provide as under: (a) each child upto six years of age to get 300 calories and 8-10 grams of protein; (b) each adolescent girl to get 500 calories and 20-25 grams of protein; (c) each pregnant woman and each nursing mother to get 500 calories and 20-25 grams of protein; (d) each malnourished child to get 600 calories and 16-20 grams of protein; (e) have a disbursement centre in every settlement."

Further orders were issued in April 2004 and October 2004. For example, on April 29, 2004, the Supreme Court directed that "all 0-6 years old children, adolescent girls, pregnant women and nursing mothers shall receive supplementary nutrition for 300 days in a year."

However, as discussed earlier, the implementation of the ICDS and mid-day meal scheme has remained woefully inadequate. The statistics presented by NFHS-III and reproduced earlier are, to say the least, shocking and clearly bring out that the nutritional status of children in India continues to be abysmal. Taking serious note of the poor implementation of ICDS, the Supreme Court directed the Government in December 2006 to:

1. Set up at least 14 lakh functional anganwadi centres in a phased manner by December 2008. While doing so, the Centre should identify SC and ST hamlets/habitations for anganwadi centres on a priority basis.
2. Ensure that the population norms are maintained — the upper limit is of one anganwadi centre per 1,000 population, the minimum limit is 300.
3. Entitle rural communities and slum dwellers to "anganwadi on demand" for a settlement with at least 40 children under 6 but no anganwadi.
4. ICDS services should extend to every child under the age of 6, all pregnant women and lactating mothers and all adolescent girls.

In order to comply with the above directives of the Supreme Court, the government has expressed its commitment to expand the scheme in order to cover all habitations and settlements during the Eleventh Plan period and to reach out to pregnant women, lactating mothers and all children below the age of six. In line with this commitment, the Government has increased the bugdet allocation for ICDS and MDM schemes considerably during the recent years. In addition, ICDS has been universalised. The benefits of MDM scheme were extended to as many as 11.04 crore children across the country in 2009-10.

Nutrition Plan Way Off Target. The Seventh Report of the Commissioners (N.C. Saxena and Harsh Mander) of the Supreme Court has pointed out that the nutrition plan of the government is way off the target. For instance, while there were 160 million children sought to be covered by the SNP (supplementary nutrition programme), only 58 million are 'SNP beneficiaries'. Thus, **two out of three children from poor families in India are being ignored by a programme that seeks to provide them supplementary nutrition.** According to Saxena, the poorest compliance is in States that need the programme the most. "25 per cent of India's districts are responsible for more than 50 per cent of malnourished children, and these districts are mostly located in the poorer States. Yet, the poorest States and those with the highest levels of under-nutrition have the lowest levels of programme funding, supervisory staff, capacity to utilise funds and monitor progress, resulting in poor outcomes."

As far as funds structuring is concerned, the Central Government provides 50 per cent of the funds for SNP and the balance 50 per cent is to be provided by the States on a 'matching' basis. Many States are not willing to pay their share and frequently their funding of SNP is as low as 25 per cent. Since States can avail only that proportion of Central funding that they have matched, this effectively means that only 50 per cent funding is met. Thus, **States meet only half their obligation**.

4.2.5 INDIAN TAX POLICY FOR AGRICULTURAL INCOME

In India about two-third of the population are dependent on agriculture for their livelihood. Simultaneously we observe that per capita income in India is one of the lowest in the world. About one-third of the world's poor live here. One reason for this low income level is the fact that though so many people are engaged in agriculture, productivity of labour in this sector is very low. Massive unemployment, under-employment (which means that works are allotted far less wok than they are capable of doing), unequal landholding structure, extremely low wages are the major problems/ features of Indian agriculture. Many measures including taxation of agriculture have been suggested to solve these problems. But given the fact that the a verage level of output is very low, the issue of taxation of agriculture has always been dealt with carefully. High taxation may drive people out of production. With virtually no alternative employment opportunities, these people may either starve or migrate to the urban aras, which are already faced with so many problems of overcrowding. Taking this into consideration, the government policy has been not to tax agriculture income at all. Under the Constitution of India, taxation of agricultural income is the right of state governments. The Central Government cannot levy tax on such income. Income from agriculture upto and exclusive of the processing stage and onwards will be non-agricultural income. Income from a farmhouse used for agricultural purposes will be treated as agricultural income. Thus income from basis operations on land like cultivation, growing crops and secondary operations like land removal, digging, etc., can be classified as agricultural income and is exempt from tax. However, income from sale of trees, breeding of livestock, fishing activites, poultry farming cannot be classified as agicultural income and is not exempt from income tax.

Problems created by this policy

(i) People engaged in non-agricultural sector have a tendency to evade taxes by somehow showing that their income is derived from agriculture. The big rich farmers are not taxed at all which cannot be rationalized. Land tax has been constant in money terms and occupies a very low share of total agricultural income. This has benefited the big farmers as they are not required to pay income tax and land revenue is quite low.

(ii) Another debated clause of the agricultural income tax policy is to tax the rent income in agriculture. Given that tenancy of land is widely practiced in India and the landlords who lease out lands in most cases are quite rich, the policy of exempting the rent income lacks a basis. Supreme Court in a case had ruled that the shareholders of a company, which is engaged in agricultural operations, could be taxed since they are not directly involved in the actual productive activities. The same logic also applies to the landlords, who like the shareholders, are not engaged in the direct agricultural activities and earn their income through merely possessing a piece of land.

Suggestions to bring agriculture into the fold of direct taxes:

- To impose land taxes on the basis of ownership. Marginal and small farmers may be exempted from this tax. The emphasis on ownership in this tax is also important. Many large farmers do not cultivate the land they own, they lease them out to smaller farmers. So, the tax will catch the big farmers, who own land and but do not cultivate it;
- To tackle the problem of non-agricultural income shown as agricultural income (i.e., the farmhouse in sub-urban areas, which are used for housing lavish parties, running pubs or restaurants or gardening, but completely exempted from paying any tax) the policy of imposing tax on land would come handy. There are, however, debates regarding the fixation of suitable tax rates. Some contend that it should be based on productivity and potential fertility of soil. More fertile land should be taxed more.

- To fix tax rate according to the nature of the crop grown on the land. More valuable crops should invite a high tax rate to the corresponding land. Because the quality of land can be changed by application of fertilizers, etc.

While all this debate regarding determining the basis of taxation have been going on for last few decades, no effort has yet actually been made to tax the agricultural income. The agricultural rich still do not pay any tax on the large sums of money they make. The non-agricultural rich own large farmhouses, use them for hotelling, tourism and other industrial purposes and are still exempted from paying tax. In other words, the poverty of the majority of the small and marginal faramers are used by the rich people to gain tax exemption. They always harp on the fact that the Indian farmers are very poor and therefore, no direct tax should be imposed on them. By giving this excuse they have ensured that they themselves do not have to pay any taxes.

Besides this the policymaking of our governments are too much influenced by the rich farmers and non-farmers who reap the benefits of such tax exemptions. It is a fact that an average Indian farmer is really poor and has to be provided with tax benefits. But this should not deter the authorities to tax the rich who are getting benefited by the provisions meant for the poor. However, the compulsions to stay in power make the government do things which are contrary to this logic. The farmer lobby has influencd the policymaking since Independence in various ways:

- By turning the terms of trade in their favour against the industries;
- Securing subsidized seeds, fertilizers and power;
- Securing complete tax relief for their income.

Though the government, at times, talked of imposing a more rational tax system based on income and wealth through expert committee report, but none of them could be implemented.

4.2.6 SUMMARY

This Chapter of Unit-4 deals with the problems of food security in India. Then it highlights the role of Public Distribution System (PDS), Targeted Public Distribution System (TPDS), ICDS Projects, School Mid-day Meals Schemes, etc., in ensuring food security. Lastly, it analyses the Indian Tax Policy for agricultural income.

4.2.7 SELF ASSESSMENT QUESTIONS

1. Define food security and identify the problems of food security in India.
2. Evaluate the role of Public Distribution System (PDS) and Targeted PDS in ensuring food security in India.
3. Examine the effectiveness of the ICDS and School Mid-day Meals Scheme as the measures to improve nutritional conditions of children in India
4. Spell out the Indian tax policy for agricultural income.

LET US SUM UP

This forth unit spells out the appropriate policy package of the government to make certain fundamental changes in the agrarian economy for achieving high growth. It has examined the trends of investment in agricultural sector in the wake of WTO. and globalization. The unit also highlights India's food policy. It describes the nature of food security in India. It analyses the role of Public Distribution System (PDS), Targeted Public Distribution System (TPDS), ICDS and Mid-day Meals Scheme in ensuring food security. Then the unit describes the Indian Tax Policy for agricultural

income. Agricultural income, on an average, is very low in India. Therefore, the government has chosen the policy of not taxing it at all. However, it is the rich farmers who are taking the maximum benefits and of such exemptions. The non-agricultural rich, who show their income to be agricultural also reap the benefits. Government provides agricultural subsidies for various reasons which has served its purpose at many crucial juncture. It has helped in raising the standards of living of poor peasants and mitigated the food crisis.

Key Terms

1. **Public Distribution System (PDS)**: Government system providing subsidized food staples to low-income families through fair price shops.
2. **Food Subsidies**: Government support to keep food prices low for consumers, especially those in need, through financial assistance or price controls.
3. **Minimum Support Price (MSP)**: Guaranteed price set by the government to protect farmers by ensuring them a minimum price for their crops.
4. **Nutrition Programs**: Government initiatives targeting malnutrition and improving health, such as providing nutritious meals to children in schools (Mid-Day Meal Scheme).
5. **Agricultural Reforms**: Policies and programs aimed at enhancing agricultural productivity, income support for farmers, and promoting sustainable farming practices.
6. **Food Safety and Standards**: Regulatory framework ensuring food safety and quality standards are met to protect consumer health (FSSAI).
7. **Trade Policies**: Government regulations governing the import and export of food products to maintain balance in domestic food supply and prices.
8. **Storage and Distribution Infrastructure**: Facilities and systems for storing and transporting food to prevent spoilage, reduce wastage, and ensure efficient distribution.
9. **Research and Development in Agriculture**: Efforts to improve crop yields, develop resilient varieties, and enhance farming techniques through scientific innovation.
10. **Food Waste Management**: Strategies to minimize food wastage across the supply chain, including storage, transportation, and consumption, to conserve resources and reduce hunger.

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5.1 Chapter

AGRICULTURAL DEVELOPMENT AND FIVE YEAR PLANS IN INDIA

Objectives

After completing this chapter, you will be able:

- To understand the trends in the use of various agricultural inputs - irrigation, fertilizers, high yielding varieties of seeds, pesticides and related issues
- To know about the green revolution engineered by the use of the above agricultural inputs and its impact on production and productivity levels, regional disparities, interpersonal inequalities, etc.

Structure:

5.1.0 INTRODUCTION

Much ink has been spilled to define and redefine the role of agriculture in sustaining the lifestyles of man. And much water has flown down the Ganges in the measurable time interval which stretches from 1950-51 till date. All the planners and budget preparers made agriculture a thrust-area where self-sufficiency and self-reliance were the true two broader virtues of consideration. How much we have achieved down the passage of time is what needs to be critically investigated. Agriculture remains an area of vociferous interest, but unfortunately our lethargy in response to this has been awfully deplorable. It is time we set wholeheartedly to address this issue without letting time slip through our fingers. From time to time, our enlightened Govt., is augmenting the quantum of investment for modernizing agriculture and boosting the productivity to feed the hungry millions across the nation. In the age of Globalization, some competitive steps have been undertaken to project India's agriculture in the international agricultural scenario and the WTO is a roaring platform to witness all these.

5.1.1 DEVELOPMENT OF AGRICULTURE IN DIFFERENT PLAN PERIODS

Before the planning period, agriculture was in a depressed and deplorable condition. Farmers were generally in heavy debts to the professional village moneylenders and agriculturist moneylenders. They had neither the money nor

the knowledge to use proper equipment, good seeds and chemical manures. Mostly, agriculture was dependent upon rainfall and the vagaries of the monsoon. Farmers were having small and scattered holdings. Productivity of land as well as of labour had been declining and was the lowest in the world. Though nearly 70 per cent of our working population was engaged in cultivation the country was not self-sufficient in foodgrain production but had to depend very heavily on imports of foodgrains to satisfy the minimum requirements of the people. Table-5.1 gives the total outlay for each plan and correspondingly, the outlay on agriculture and irrigation up to 8th Five Year Plan as data available.

Table 5.1: Pattern of outlay given for agriculture in the plans

(₹ In crores)

Sl. No.	Plan Period	Total Plan outlay	Outlay on Agricultaure & irrigation	Percentage of total outlay
1	First plan	1960	600	31
2	Second plan	4600	950	20
3	Third plan	8600	1750	20
4	Fourth plan	16,160	3300	21
5	Fifth plan	39,300	8080	21
6	Sixth plan	97,500	24,700	25
7	Seventh plan	1,80,000	29,770	22
8	Eighth plan	4,34,100	89,418	21

Table 5.2: Gives the achievements in the agricultural sector in terms of total foodgrains, oilseeds, sugarcane, cotton and jute under the various five year plans.

Sl. No.	Plan Period	Food gains		Oilseeds		Sugarcane		Cotton		Jute & mesta	
		Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
1	1st plan	62	67	5.5	5.6	63	60	4.2	4.0	5.4	4.2
2	2nd plan	81	80	7.6	6.5	78	104	6.5	5.4	6.5	4.0
3	3rd plan	100	72	9.8	6.4	100	127	7.0	4.6	6.2	4.5
4	4th plan	129	104	10.5	8.7	150	140	8.0	5.8	7.4	6.2
5	5th plan	125	126	12.0	8.9	165	165	8.0	7.1	7.7	7.1
6	6th plan	154	146	11.1	13.0	215	170	9.2	8.5	9.1	7.8
7	7th plan	180	172	18.0	17.0	217	210	9.5	10.5	9.5	7.9
8	8th plan	210	--	23.0	--	275	--	14.0	--	9.5	--

1. Production of foodgrains, oilseeds and sugarcanes in million tonnes.
2. Production of cotton in million bales of 180 kgs each
3. Production of jute in millions of bales of 170 kgs each

It is clear from the Table-1 that though the total allocation to agriculture and irrigation is increasing in every successive Five Year Plans the percentage allocation is on a decreasing trend, the allocation being 20-25% of the total.

First Five-Year Plan (1951-56)

Agriculture was given the topmost priority in the First Five-Year Plan. The Plan was mainly directed towards increasing agricultural production and strengthening economic infrastructures like irrigation, power and transport after independence, there was an acute food shortage in the country and to solve the food problem, priority was given to increase production of foodgrains. Under the First Five Year Plan (1951-56), a sum of ₹ 601 crores, some 31% of the total outlay, was allocated for agriculture and irrigation. The planning efforts brought 5.1 million hectares of land under irrigation and reclaimed 1.1 million hectares. The intensive method or paddy cultivation was adopted.

As a result, the production of foodgrains increased from 54 million tonnes in 1950-51 to 65.8 million tonnes at the end of the Plan. Production of all agricultural commodities increased by 22.2 per cent to 32 per cent of the total outlay during the First Plan was to be spent on agriculture and irrigation. The targets sent out for the Plan were almost achieved, and, even in some cases, exceeded. A good monsoon was helpful for the success of agriculture during the First Plan period. Agriculture occupies a key position in the Indian economy because of its contribution to overall economic growth through supplies of food, raw material and exports. It is a source of livelihood for a majority of the population and provides a large market for non-agricultural goods and services. Therefore, agriculture has remained one of the important sectors in the various Five Year Plans designed by India's Planning Commission.

The abolition of zamindari system, the launching of the community development programme, growing more food campaign along with improvement in other related spheres like marketing, fisheries, animal husbandry, soil conservation and forestry were the notable features of the First Five-Year Plan. There was a remarkable increase in agricultural production during the First Plan period.

Second Five-Year Plan (1956-61)

In the second plan, emphasis was shifted from agriculture to heavy industrialization of the economy. A sum of ₹ 950 crores (20% of the total public outlay) was spent on the Agricultural sector that means only about 21 per cent of the actual plan expenditure was spent for agricultural development. The food production rose from 65.8 million tones to 79.7 million tonnes as against the fixed target of 80.5 million tonnes. There was a shortfall in the production of all crops except sugarcane, As a result of this unsatisfactory agricultural production; the country had to import foodgrains from abroad to overcome the food shortage.

Unlike the emphasis on crop production in the First Plan, the Second Plan aimed at, diversification of agricultural economy, developing live stock and community development. About 5.8 million hectares of additional land was irrigated. But bad weather and an insufficient increase in the consumption of nitrogenous fertilizers resulted in a production shortfall which led to high prices for agricultural commodities. Therefore, during this Plan, an inflationary situation started in the economy.

Third Five-Year Plan (1961-66)

The objective of the Third Five-Year Plan was to achieve self-sufficiency in foodgrains and to increase the agricultural production to meet the needs of industry and export. The plan accorded higher priority (20.5 per cent) to agriculture and irrigation than to industrial development (20.1 per cent).

Achieving food-self sufficiency was the major objective of the Third Five Year Plan (1961-66). An Amount of ₹ 1,745 crores (20.4% of the total public outlay) was invested in the agricultural sector. Unfortunately, on account of intermittent wars with neighbouring countries, such an objective was not realized.

Though the Plan targeted to increase overall agricultural production by 30 per cent, yet the achievements were disappointing. The actual output of foodgrains was 88.4 million tonnes in 1964-65 and 72.3 million tonnes in 1965-66,

caused due to the drought condition of 1965-66. The food production increased by 10 per cent only as against the target of 30 per cent. Consequently, the country had to import ₹ 1,100 crores worth of foodgrains to meet the domestic demand.

Three Annual Plans (1966-69)

Since the Fourth Five Year Plan could not be introduced in April 1966, the Government started an annual planning process for the next three years, a sum of ₹ 1,624 crores (24% of the total public outlay) was spent on the agricultural sector during this period. An unprecedented drought, however, reduced production and the consequent shortfall resulted in increased prices. A high priority was given to minor irrigation during this period and this was followed by adoption of a high yielding variety programme there was a record foodgrain production of 95.6 million tonnes in 1967-68 and 1968-69. Thus, this period is considered crucial for Indian agriculture, since the new agricultural strategy was tried at this time and the embryo of the "Green Revolution" was conceived during this period and the Government set up Agricultural Prices Commission to assure minimum support prices to farmers and the Food Corporation of India for maintaining buffer-stock to overcome fluctuation in the supplies of foodgrains and their prices. However, this period of annual planning may be considered as a landmark in Indian agriculture.

Fourth Five-Year Plan (1969-74)

The Fourth Plan emphasized the necessity to create additional infrastructure for the promotion of agriculture and to make increasing use of science and technology for this purpose. This plan had two objectives in the agricultural sector; (i) to provide the conditions necessary for a sustained increase of food production by about 5 per cent per annum over the decade 1969-78 and (ii) to enable a large section of the rural population including small farmers, farmers in the dry areas and agricultural labourers to participate in the process of agricultural development and share its benefit.

The Planning Commission adopted a "yield increase" strategy through the introduction of intensive agricultural production techniques. However, targets of production could not be realized, particularly for rice. Production of commercial crops such as cotton, jute, etc., was much below the target. The Fourth Plan showed a substantial shortfall in production on account of failure not only to reach the targeted consumption of 55 lac tonnes of fertilizers not only to reach the targeted consumption of 55 lac tonnes of fertilizers against the production of 30 lac tonnes in 1973-74, but also to utilize 119 million hectares of irrigation potential.

Fifth Five-Year Plan (1974-79)

The Fifth Plan accorded priority for the spread of H.Y.V. cultivation, double or multiple, greater use of fertilizer pesticides and insecticides to increase agricultural production. Especially gave emphasis on; (i) small and marginal farmers, (ii) dry farming technique, (iii) evolving H.Y.V. seeds for other crops like paddy, (iv) social conservation measures on saline and alkaline soils and for desert land reclamation. As a result of which the production of foodgrains increased substantially, i.e., 232.5 million tonnes. But the output of pulses and oil-seeds, paddy remained stagnant and caused considerable hardship for the common man.

The revised Fifth Plan (1974-79) allotted 20.5% of the total public outlay to the agricultural sector (₹ 8080 crores was made for agricultural development and irrigation). However, this plan was terminated at the end of its fourth year after the emergence of the Janata Government. The Janata Party gave more emphasis to the agricultural sector and started annual planning with a five year perspective, also known as the Rolling Plan. Though targets of production could not be reached, performance of crop production was satisfactory. Foodgrains production rose in 1975-76 to 121 million tonnes and 126.4 million tonnes in 1977-78.

Sixth Five-Year Plan (1979-83) and (1980-85)

The Sixth Plan was expected to gear the third phase of development in Indian agriculture, that is, it gave greater attention to marketing, trade and the institutional framework. The main objective of the Plan, therefore, was to increase agricultural production, generate employment and income opportunities by introducing Integrated Rural Development Programmes (IRDP) and National Rural Employment Programmes (NREP) in rural areas and strengthen the forces of modernization for achieving self-reliance.

Further, the plan aimed at accelerating the pace of the implementation of the land reforms and institution building for beneficiaries. The Sixth Plan aimed at 3.8 per cent annual growth in agricultural production. But, the actual growth-rate was 4.3 per cent. The Sixth Plan was officially held as a great success particularly due to its success on the agricultural fund.

However, the Sixth Plan provided for an overall growth rate of 3.83% per annum in the agricultural sector. It also aimed to build up a National Food Security System to provide (i) ecological security, that is, to save principal life support systems such as soil and water, (ii) technological security, that is, growth with stability, (iii) a grain reserve of 15 million tonnes and for the intensification of the "Save Grain Campaign", (iv) social security, that is to provide sufficient purchasing power in the hands of poor people, (v) nutritional education, and (vi) price stability in the economy by increasing production of commodities in short supply. Much of this increase will be contributed by the production of improved seeds and through increased fertilizers consumption.

Seventh Five-Year Plan (1985-90)

The Seventh Plan aimed at an annual average increase of 4 per cent in agricultural production. The Plan allocated ₹ 39,770 crores for agricultural sector which is 22 per cent of the total plan outlay. The major programmes adopted during the plan were, a special rice production programme in the eastern region, national water-shed programme for rainfed agriculture, national oilseed development project and social forestry.

The target fixed for the growth of agricultural output during the Seventh Plan Period was 4 per cent per annum and the target for food grains output 3.7 per cent per annum. To achieve these targets, efforts were to be made to irrigate an additional area of 11 million hectare during the Seventh Plan period. The consumption of fertilizers aimed used to increase increased from 8.4 million tonnes in 1984-85 to 13.5-14.0 million tonnes in 1989-90.

Unfortunately enough, the first three years of the Seventh Plan were poor monsoon years. As a result, agricultural production received a set-back during these years. However, it increased sufficiently during the last two years for which the agricultural production recorded a commendable growth of 4.1 per cent in the Seventh Plan as against the target of as per cent rice.

ANNUAL PLANS

The Eighth Five Year Plan (1990-95) could not take off, due to the fast changing political situation at the Centre. The new Government, which assumed power at the Centre in June 1991, decided that the Eighth Five Year Plan would commence on 1 April 1992, and that 1990-91 and 1991-92 should be treated as separate Annual Plans. Formulated within the framework of the Approach to the Eighth Five Year Plan (1990-95), the basic thrust of these Annual Plans was on maximization of employment and social transformation.

Eighth Five-Year Plan (1992-97)

The Eighth five year plan was launched immediately after the initiation of structural adjustment policies and macro stabilization policies, which were necessitated by the worsening Balance of Payments position and inflation position

during 1990-91. The various structural adjustment policies were introduced gradually so that the economy could be pushed to a higher growth path and improve its strength and thus prevent Balance of Payments and inflation crisis in future. The basic objectives of the Eighth FiveYear Plan were

(i) To consolidate the gains already achieved in agricultural productivity and production during the last 40 years;

(ii) To sustain agricultural productivity and production in order to meet the increased demands of the growing population;

(iii) To enlarge the income of the farmers;

(iv) To create more employment opportunities in the agricultural sector; and

(v) To step up agricultural exports.

22 per cent of the total plan outlay amounting to ₹ 93,680 crores was allotted for agriculture and irrigation. The Plan targets a growth rate of 4.1 per cent per annum for the agricultural sector.

Thus, during different plan periods, the Government has accorded vital importance to the agricultural sector and has tried to increase the agricultural production and productivity through different policy measures.

Ninth Plan (1997-2002)

This plan was launched in the fiftieth year of India's Independence. The Planning Commission constituted 23 Steering Committees and 116 Working Groups, covering various sectors for the formulation of the Plan. This preparatory work culminated in the finalization of the "Approach Paper to the Ninth Plan" in the form of broad guidelines for the preparation of the detailed Plan. The Approach Paper was approved unanimously by the National Development Council.

The salient features of the Approach Paper were (i) A targeted GDP growth rate of 7 percent annum for the Ninth Plan Period. (ii) Emphasis on the seven identified Basic Minimum Services (BMS) with additional Central Assistance earmarked for these services with a view to obtaining a complete coverage of the population in a time bound manner including providing safe drinking water, availability of primary health service facilities, universalization of primary education, public housing assistance to shelter less poor families, nutritional support to children, connectivity of all village and habitations and streamlining of the public distribution system with a focus on the poor (iii) In pursuing a policy of fiscal consolidation, the focus was on sharp reduction in the revenue deficit of the Government; and (iv) decentralization of planning and implementation through greater reliance on States and Panchayati Raj institutions.

The Government reviewed the draft Ninth Plan so as to suitably reflect the altered priorities, as enunciated in the National Agenda for Governance, in general and the Prime Minister's Special Action Plan (SAPs) in particular. Accordingly, the Plan document was revised to incorporate the SAPs in the following areas : (a) Doubling of food production and making India hunger free in 10 years; (b) Rapid improvement in physical infrastructure; (c) National Water Policy; (c) Social Infrastructure; Rural Housing, Urban Housing, Health Care Services, Education, Urban Water Supply and Sanitation; Rural Water Supply and Sanitation and (d) Information Technology.

Tenth Five Year Plan (2002 -2007)

The basic objectives of the Tenth Plan were (i) Reduction in poverty ration from 26% to 21% by 2007, (ii) Decadal population growth to reduce from 21.3% in 1991-2001 to 16.2% in 2001 - 2001 and (iii) Growth in gainful employment to, at least, keep pace with addition to the labour force.

5.1.2 SUMMARY

This unit gives a full account of agricultural development in different plan periods. It also highlights the measures undertaken by the Government of India to modernize agriculture, increase its efficiency and raise its productivity and enable Indian agriculture to enhance its competitive spirit in the international sphere.

5.1.3 SELF ASSESSMENT QUESTIONS

1. Give an account of the agricultural development in India in different Five Year Plan periods.
2. Briefly examine the measures undertaken by the Government in recent years to raise competitive efficiency of agriculture in the international market.

Reference:

1. Indian Rural Problems-Nanavati and Anjaria

2. Report of the National Commission on Agriculture in India, 1976

3. Report of the Rural Credit Survey of India (Vol-II-1964, Reserve Bank of India)

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5. Co-operative Movement in India-Hough

6. Indian Agriculture, 1st Fluctuating Fortress-S. P. Sinha

7. Report of the Food Grains Enquiry Committee, 1956

8. Report of the Irrigation Commission, 1972

9. Technological Change and the Distribution of Grains in Indian Agriculture-Ch. H. Rao

10. Agriculture Production of India-C. B. Memoria

11. The Green Revolution in India-B. Sen

12. Report on Agriculture Census of India, 1970-71

13. Land Reform in Principle and Practice-Warriner

14. Land Reform and Economic Development-Peter Droner

Key Terms

1. **Integrated Rural Development Programs**: Initiatives aimed at holistic development of rural areas, including agriculture, infrastructure, education, and healthcare.
2. **Rural Electrification**: Expansion of electricity infrastructure to rural areas to support agricultural mechanization and improve living standards.
3. **Land Reforms**: Policies aimed at redistributing land ownership to address inequities and improve agricultural productivity.
4. **Technology Dissemination**: Efforts to spread agricultural innovations and modern practices among farmers through extension services, demonstrations, and training programs.
5. **Cooperative Farming**: Agricultural production organized and managed collectively by groups of farmers to achieve economies of scale and improve bargaining power.

5.2 Chapter

NEW AGRICULTURAL STRATEGY (SEED-FERTILIZER-PESTICIDE-WATER-STRATEGY)

Objectives

After completing this chapter, you will be able:

- To know about new agricultural strategy which is also known as 'seed-fertilizer-pesticide-water technology'.
- To know about wonder seed called high yielding variety (HYV) and its impact on agriculture.
- To know how all the components of new technology such as HYV seeds, fertilizer, pesticide and irrigation water in a combination boost productivity of agriculture.

Structure:

5.2.0 INTRODUCTION

During the sixties India wanted to be self-sufficient and self-reliant in foodgrain production with the slogan words "Jai-Jawan , Jai-Kisan" of the then Prime minister of India, Lal Bahadur Shastri. This may also be attributed to the USA's refusal to provide foodgrain aid to India due to her victory in Indo-Pak war of 1962. At the same time for domestic food security, we need to sustain agricultural growth to raise productivity. However, it was a sheer coincidence that, by this time, after years of international research and experimentation, the new high yielding short duration, short stem, fertilizer responsive varieties of seeds (HYV's) of wheat and rice became available for commercial cultivation in India. With this agricultural development strategy went under a dramatic change. The change was from traditional to modern agriculture-based on the use of non-farm purchased inputs like fertilizers, pesticides, electric and diesel pumpsets, irrigation water, tractors and later on harvester combines. The adoption of the HYV technology yielded such spectacular results that it was termed as 'Green revolution'. And the technology is commonly known as seed-fertilizer - water technology. More about the new technology is delineated below.

5.2.1 HIGH YIELDING VARIETY OF SEEDS

Under the new agricultural strategy, special emphasis has been placed on the development and widespread adoption of high-yielding varieties of seeds. Though the government had been paying attention to induce qualitative improvements in seeds ever since the initiation of planning process in the country, yet the real impetus to these efforts was given by the adoption of the new agricultural strategy in the kharif season of 1966. In Mexico, Prof. Norman Borlaug and his associates developed new varieties of wheat which were early-maturing, highly productive and disease resistant during the mid-1960s and these varieties were imported and planted in selected regions of India having adequate irrigation facilities. Within a year of their introduction, it was conclusively demonstrated that the yields from the new varieties exceeded 25 to 100 per cent compared to the yields from traditional varieties. This sent a wave of hope and enthusiasm in the planning circles and the programme was launched on a more ambitious scale though by the very nature of these seeds (which require ample water), the programme of expansion remained limited to only irrigated areas of the country. In 1966-67, area under high-yielding varieties of seeds was a meagre 1.89 million hectares. This rose to 18.17 million hectares in 1971-72. The Seventh Plan kept a target of 70 million hectares for coverage in area under HYV. As against this, the actual area under HYV by the end of Seventh Plan was only 63.1 million hectares. In 1998-99, the coverage rose to 78.4 million hectares (data for later years are not available).

Production of improved seeds and especially high-yielding varieties of seeds was encouraged on the farms of the Centre and the State governments and by registered seed growers. Side by side, Indian Council of Agricultural Research, Punjab Agricultural University at Ludhiana, G.B. Pant Agricultural University at Pantnagar and several other research institutes were engaged in the task of developing new hybrid varieties suitable to Indian conditions and in adopting imported varieties to Indian requirements. While in selected regions of the country Mexican varieties of wheat like Lerma Rojo-64-A and Sonara 64 were directly introduced in the initial period, considerable attention was later given to hybridisation of Mexican material with Indian varieties. This gave rise to a large number of new varieties. To tackle the problem of specific deficiencies in Mexican varieties, such as the red colour of grains, new varieties like Sharbati Sona and Pusa Lerma were developed.

Introduction of such high-yielding varieties of wheat depends crucially on the availability of fertilisers, adequate water supply, pesticides and insecticides. Therefore they have to be launched in the form of a 'package programme'. Because of their dependence on irrigation, they could be adopted only in areas having proper irrigation facilities. Even then, area under high yielding varieties of wheat which was a meagre 0.54 million hectares in 1966-67, rose to 7.86 million hectares in 1971-72 and 24.0 million hectares in 1998-99. The rapid expansion of the area under HYV would be clear from the fact that wheat area covered under HYV was 87.2 per cent in 1998-99 of the total area under the crop (data for later years are not available). HYV area as a percentage of total cropped area was 95.0 per cent in the case of jowar, 76.9 per cent in the case of bajra, 73.7 per cent in the case of rice but only 58.0 per cent in the case of maize in 1998-99.

Indian seed programme includes the participation of Central and State Governments, ICAR, State Agriculture Universities, public sector, cooperative sector and private sector institutions. Seed sector in India consists of two national level corporations, i.e., National Seeds Corporation (NSC) and State Farms Corporation of India (SFCI), 13 State Seed Corporations (SSCs) and about 100 major private sector seed companies. For quality control and certification, there are 22 State Seed Certification Agencies (SSCAs) and 101 State Seed Testing Laboratories (SSTLs). Though the private sector has started to play a significant role in the production and distribution of seeds particularly after the introduction of the New Seed Policy of 1988, the organised seed sector particularly for food crops and cereals continues to be dominated by the public sector. As far as the distribution of certified/quality seeds is concerned, it increased from 25 lakh quintals in 1980-81 to 277.3 lakh quintals in 2010-11.

Unfortunately, **the seeds revolution of 1960s and 1970s appears to have tapered off after encompassing only the cereal segment. Improved seeds technology continues to elude vital segments of the farm economy such as pulses, oilseeds, fruits and vegetables.** As a result, the country has to import nearly 2 million tonnes of edible oils and about a million tonnes of pulses every year so as to meet the domestic demand. Low yields in several crops due to inadequate or low quality inputs have exacerbated the skewed agricultural pattern. For instance, Madhya Pradesh, long regarded as the country's soya bowl, has reportedly initiated steps to shift to paddy cultivation due to stagnating soyabean yields. Even in case of rice and wheat, only five States had surpluses in 1999-2000. The remaining States had deficits of more than a third of their consumption. The situation in Southern and Western States is likely to worsen in the next two decades. And if the current surplus States mainly Punjab and Haryana, see a decline in output (due to land degradation, falling water tables or climate change) it will become essential to harness the full production potential in Eastern and Central India. Adequate supply and quality of seeds — the fundamental input — will become crucial to produce sufficient food for consumption.

In the above context, the National Seeds Policy 2001 provides the framework for growth of the Seed Sector. It seeks to provide the farmers with a wide range of superior quality seed varieties and planting materials. The government has also begun the process of drawing up a 10-year national seed plan, with inputs from the States on the particulars of regionwise seed requirements. The plan also covers phasing out of outdated crop varieties and discontinuing their seed production. The aim is to ensure adequate availability of seeds of acceptable quality that meets the yearwise requirements of the States for individual crops over a fairly long period as well as to anticipate supply shortfalls. The policy recognises the need for an appropriate climate for the seed industry to utilise available and prospective opportunities, safeguarding of the interests of Indian farmers and the conservation of agro-biodiversity. With this end in view, it proposes several initiatives for the development of new plant varieties with improved yield characteristics, ability to withstand biotic and abiotic stresses and locational adaptability. A national gene fund is to be established to ensure benefit sharing and a national seed map is to be drawn up to identify potential alternative and non-traditional areas for seed production of specific crops. Seed village schemes and seed banks will be launched to ensure timely availability of sufficient seed quantities, seed breeders will be eligible for crop insurance, and imports of seeds and the use of biotechnology to develop transgenic varieties will be encouraged. The policy also envisages expansion of India's share of the global seed export market from less than 1 per cent now to 10 per cent by 2020.

Legislation on Plant Varieties and Farmers' Rights Protection

In order to fulfil the obligations under the TRIPs (Trade Related Intellectual Property Rights) Agreement of the WTO (World Trade Organisation), the Parliament passed the Protection of Plant Varieties and Farmers' Rights Legislation in August 2001. **The objective of this legislation is to provide an effective system for the Protection of Plant Varieties and Farmers' Rights which will also stimulate investment for research and development both in public and private sector for development of new plant varieties by ensuring appropriate returns on such investment.**

TRIPs Agreement offers three options as far as protection of new plant varieties is concerned: protection will have to be granted by a patent, an effective *sui generis* system or a combination of the two. India ultimately opted for the *sui generis* system after a determined struggle by civil society to stop seed patents. Obviously, the multinational corporations (MNCs) were interested in seed patents as that would have guaranteed the seed market to them. As pointed out by Suman Sahai, in many developed countries seed production is now in the hands of MNCs who have bought up all the smaller seed companies. However, in India, this strategy cannot work as there are no seed companies of any significant size that can be bought. In fact, it is the farmers themselves who are the largest seed producers providing about 87 per cent of the country's annual requirement of over 60 lakh tonnes. Therefore, if MNCs have to

control seed production, they must knock out the farmers from the market by legally taking away their right to sell seeds. And this can be done through seed patents only. By opting for the *sui genrsis* system, the government has effectively blocked this strategy of the MNCs. The Bill passed by the Parliament recognises the farmer not just as a cultivator but also as a conserver of the agricultural gene pool and a breeder who has bred several successful varieties. The bill makes provision for such farmers' varieties to be registered with the help of NGOs (non-governmental organisations) so that they are protected against being scavenged by formal sector breeders. The rights of rural communities are acknowledged as well. The final version of the clause on what constitutes a farmers' right reads, "The farmer ... shall be deemed to be entitled to save, use, sow, exchange, share or sell his farm produce including seed of a variety protected under this Act in the same manner as he was entitled before the coming into force of this Act; provided that the farmer shall not be entitled to sell branded seed of a variety protected under this Act." This provision clearly allows the farmer to sell seed in the way he has always done, with the restriction that this seed cannot be branded with the breeder's name. Thus, it protects the rights of both farmers and breeders. The farmer can sell his seeds and the breeder can protect his innovation by having control of the commercial market.

By protecting the right of farmers to sell non-branded seeds, the government has ensured that control over seed production continues to vest in their hands. This was essential because control over seed production is central to self-reliance in food. As correctly pointed out by Suman Sahai, "The need for this self-reliance cannot be overemphasised. **Food security is in the forefront of national security. A nation that does not produce its own seed and its own food cannot be a secure nation**."

The government set up the Protection of Plant Varieties and Farmers' Rights Authority in November 2005 at the National Agricultural Science Complex (NASC) to implement provisions of the Act. Fourteen crops have so far been notified for the purpose of registration under the Act. These are rice, wheat, maize, sorghum, pearl millet, chick pea, pigeon pea, green gram, black gram, lentil, field pea, kidney bean, cotton and jute.

5.2.2 FERTILIZERS

Indian farmers use only one tenth the amount of manure that is necessary to maintain the productivity of soil. Accordingly, proper use of manure and fertilisers alone can considerably enhance the productivity of soil. Indian soil is deficient in nitrogen and phosphorus and this deficiency can be made good by an increased use of fertilisers. Since possibilities of extensive cultivation are extremely limited because most of the cultivable area is already being cultivated, there is no option but to extend intensive cultivation in more and more areas by using larger quantities of fertilisers (in conjunction with other agricultural inputs) to meet the increasing demand for agricultural commodities.

The use of fertilisers in Indian agriculture has received a boost after the initiation of the High-Yielding Varieties Programme (HYVP) in 1966. This is a 'package programme' wherein due emphasis has been given to the use of chemical fertilisers. It is also recognised now that multiple cropping is possible only by increasing the use of fertilisers.

Consumption, Production and Import of Fertilisers

The production of fertilisers has increased by leaps and bounds in the post-Independence period. For instance, from 98 thousand tonnes in 1960-61, production of nitrogenous fertilisers shot up to 12,156 thousand tonnes in 2010-11. The production of phosphatic fertilisers rose from 52 thousand tonnes in 1960-61 to 4,222 thousand tonnes in 2010-11. Adding the production and import figures for nitrogenous, phosphatic and potassic fertilisers, we find that the availability of fertilisers in the economy rose from 569 thousand tonnes in 1960-61 to 1,688 thousand tonnes in 1970-71 and further to 28,741 thousand tonnes in 2010-11. However, despite increase in production, India has had to import a large quantity of fertilisers to meet the local demand. Thus, in 1970-71, it had to import a total of 629 thousand tonnes of fertilisers

which was 28.9 per cent of total consumption. In 2010-11 the imports stood at 12,363 thousand tonnes which was 44.0 per cent of total consumption.

As far as the consumption of fertilisers is concerned, it was a meagre 66,000 tonnes in 1952-53. The advent of the HYVP in 1966 completely changed the picture and consumption of fertilisers shot up substantially. For instance, in 1990-1991 it rose to 125.46 lakh tonnes and in 2010-11 stood at 281.22 lakh tonnes. However, there are wide inter-State differences in per hectare fertiliser consumption as would be clear from the fact that per hectare consumption of fertilisers in 2009-10 was only 57.6 kg in Orissa and 81.4 kg in Madhya Pradesh against 237.1 kg in Punjab (average for the country being 135.3 kg in that year). In fact, the five States of Punjab, Haryana, Uttar Pradesh, Maharashtra and Andhra Pradesh together account 51 per cent (i.e., more than half) of the total fertiliser consumption in the country. Moreover, rainfed areas which constitute about 56 per cent of the cultivated area account for only about 20 per cent of the total fertiliser consumption.

It is generally admitted that increased use of fertilisers can add substantially to foodgrains production. For instance, it has been estimated that even **an increase in fertiliser consumption of 40 to 60 kgs per hectare can yield an additional 30 to 45 million tonnes of foodgrains**. Keeping this fact in view, the Tenth Plan advocated the adoption of measures to increase fertiliser use, especially in the States where its consumption is low, by providing adequate marketing infrastructure. As far as areas reporting high fertiliser consumption are concerned, the Plan noted that crop yields in these areas seem to have reached a plateau. The factors responsible for this are: (i) imbalance in the use of nitrogenous, phosphatic and potassic fertilisers, mainly on account of their price variations; (ii) increasing deficiency of micronutrients, which affects the growth of plants and interfers in proper uptake by the crop of applied nitrogenous, phosphatic and potassic fertilisers, and (iii) decreasing carbon/organic matter content in soil. The Plan proposed to address these issues through a holistic approach with adequate thrust on adoption of Integrated Nutrient Management (INM)/ Integrated Plant Nutrient Supply (IPNS). Under this approach, the use of organics including manures and bio-fertilisers is promoted. Use of fertilisers with irrigation (fertigation) is also promoted to ensure higher use efficiency.

5.2.3 PESTICIDES

Pesticide is defined as any substance or mixture of substances, intended for preventing, destroying or controlling any pest including vectors of human or animal diseases, unwanted species of plants and animals. Pesticides are classified according to their use and kinds of applications as insecticides, fungicides, herbicides and, other pesticides. Insecticides account for the major share of pesticides consumption in India that includes both preventive treatments, which are applied before infestation levels are known, and intervention treatments, which are based on monitored infestation levels and expected crop damages. The use of pesticides in Indian agriculture was negligible in early 1950s with only 100 tonnes of pesticides being consumed at the beginning of the First Five Year Plan. However, with the adoption of the new agricultural strategy in mid-1960s, the use of pesticides increased considerably as the new varieties are more prone to attacks by pests and insects. The pesticide application in 1970-71 stood at about 24.3 thousand tonnes. Consumption of pesticides (technical grade material) stood at 55.54 thousand tonnes in 2010-11. However, there are vast inter-State differences in the level of consumption of pesticides. Cropwise consumption of pesticides in India is also not uniform. In fact, rice and cotton alone account for over 50 per cent of the value of pesticides consumed.

Effects of Pesticides

In recent times (particularly during the last two decades), **increasing attention has been drawn to the health hazards and environmental problems that are caused by the unabated use of pesticides**. Health hazards are both direct and indirect. The former arise out of exposure of human beings to these harmful chemicals during the

process of spraying on the farmland. Such exposure can produce chronic ailments such as cardiopulmonary, neurological and skin disorders, adverse reproductive effects such as foetal deformities and miscarriages, etc. Indirect health hazards arise through intake of foods which contain toxic residues. In addition to this, indiscriminate use of pesticides can cause serious ecological damage such as toxic effect to fish stock, birds and wildlife, contamination of fragile environment of the wetlands, leaching through the soil, and contamination of groundwater, etc.

Another problem with the use of pesticides is that the targeted pests develop resistance towards them. As a result, higher and higher doses of more and more toxic chemicals have to be applied. As noted above, this has dangerous consequences. Use of fertilisers and pesticides brings about physiological changes in plants leading to multiplication and proliferation of several pests. It is also important to note that pesticides application needs a scientific approach and this approach is lacking in most of our farmers. They are not aware of the actual quantity of toxicant needed to destroy a pest and tend to use more quantity than is necessary. The surplus used appears as a residue that may persist and accumulate within the ecoweb.

Integrated Pest Management

On account of the above reasons, what is now advocated is not just pest extermination but economical utilisation of pesticidal chemicals with least ecological damages. The main facets of the plant protection system currently in use are the following three — pest and disease control through Integrated Pest Management (IPM) schemes, locust surveillance and control, and plant and seed quarantine. Integrated Pest Management includes pest monitoring, promotion of biological control of pests, organising demonstration, training and awareness of IPM technology. The IPM technology encourages the use of safer pesticides including botanicals (neem based) and bio-pesticides. Emphasis is now on training farmers in different aspects of IPM technology including agro economic system analysis so that indiscriminate use of pesticides is avoided.

5.2.4 WATER (IRRIGATION)

Increase in agricultural production and productivity depends, to a large extent, on the availability of water. Hence the importance of irrigation. However, the availability of irrigation facilities is highly inadequate in India. For example, in 1950-51, gross irrigated area as percentage of gross cropped area was only 17 per cent. Despite massive investments on irrigation projects over the period of planning, gross irrigated area as percentage of gross cropped area was only 45.3 per cent in 2009-10 (88.42 million hectares out of 195.10 million hectares). **Thus, even now almost 55 per cent of gross cropped area depends on rains. That is why Indian agriculture is called 'a gamble in the monsoons'.**

Importance of Irrigation

The following reasons explain the importance of irrigation in Indian context:

1. Insufficient, uncertain and irregular rains. The period of rainfall is restricted to only four months in a year, June to September, when monsoon arrives. The remaining eight months are dry. There is some rainfall during the months of December and January in some parts of the country. Even during monsoon, the rainfall is scanty and undependable in many parts of the country. Sometimes the monsoons are delayed considerably while sometimes they cease prematurely. This pushes large areas of the country into drought conditions. Proper development of irrigation facilities can help the country in solving the problems created by insufficient, uncertain and irregular rains. With the help of irrigation, droughts and famines can be effectively controlled.

2. Higher productivity on irrigated land. Productivity on irrigated land is considerably more than the productivity on unirrigated land. For instance, C.H. Hanumantha Rao has argued that in India in the late 1980s, the per hectare

yield of foodgrains on irrigated land was two to six times higher than the yields on unirrigated land. Moreover, yields of foodgrains under irrigation grew at an annual rate of 1.6 per cent to 2.6 per cent per annum in certain States, whereas the annual yield growth rate of foodgrains on unirrigated land was either negligible or barely 1 per cent. According to one recent estimate, nearly three-fourths of the increment in total crop output between the early 1970s and early 1990s came from expansion of irrigated area and increase in per hectare yields on irrigated land. This shows that production and productivity in agriculture can be increased considerably by extending irrigation facilities.

3. Multiple cropping possible. Since India has a tropical and sub-tropical climate, it has potentialities to grow crops on a year round basis. However, since 80 per cent of the annual rainfall is received in less than four months, multiple cropping is generally not possible. Provision of irrigation facilities can make possible the growing of two or three crops in a year in most areas of the country. This will considerably enhance agricultural production and productivity.

4. Role in new agricultural strategy. The successful implementation of the High-Yielding Varieties Programme depends, to a large extent, on the timely availability of ample water supply. The high-yielding varieties of seeds and chemical fertilisers require substantial water at regular intervals of time. This is the reason why the HYVP has remained limited to irrigated areas only. Therefore, benefits of new strategy can be extended only if more irrigation facilities are made available to larger areas of land.

5. Bringing more land under cultivation. The total reporting area for land utilisation statistics was 305.69 million hectares in 2008-09. Of this, 17.02 million hectares was barren and unculturable land, 10.32 million hectares fallow land other than current fallows, while 14.54 million hectares was current fallow lands. Current fallows include lands which are lying fallow for less than one year, other than current fallows includes land lying unploughed for one to five years. Culturable waste land comprise another 12.76 million hectares. Cultivation on all such lands is impossible in some cases while in others it requires substantial capital investment to make land fit for cultivation. Even then, the possibility cannot be ignored that provision of irrigation facilities can make some portion of this land cultivable.

6. Reduces instability in output levels. Irrigation helps in stabilising the output and yield levels. A study carried out for 11 major States over the period 1971-84 revealed that **the degree of instability in agricultural output in irrigated areas was less than half of that in unirrigated areas (the standard deviation in annual growth rates of agricultural output being 7.3 in irrigated areas as against 19.0 in unirrigated areas).** Irrigation also plays a 'protective' role during drought years. Since both income and employment are positively and closely related to output, prevention of fall in output during drought is an important instrument for achieving stability of income and employment in the countryside. Irrigation has enabled many States to acquire 'partial immunity' from drought. The vital foodgrains sector is now substantially insulated against a serious rainfall failure. This comparative insulation "has provided strength and stability to the foodgrains distribution system of the public sector. For, both procured wheat and rice that constitute the backbone of this system now mainly originate from irrigated areas."

7. Indirect benefits of irrigation. Irrigation confers indirect benefits through increased agricultural production. Employment potential of irrigated lands increases, increased production helps in developing allied activities, means of water transport are improved, income of government from agriculture increases, etc. For example, it has been estimated that for every ₹ 100 of direct benefits the Bhakra dam generated ₹ 90 of indirect benefit. It has also been observed that the contribution of irrigation to employment is greater than even high yielding varieties. Availability of regular water supply increases the income of farmers imparting a sense of security and stability in agriculture.

Irrigation Potential and Sources of Irrigation

India has vastly increased its irrigation potential after Independence. It increased from 22.6 million hectares in 1950-51 to 102.8 million hectares in 2006-07 which implies an increase of 35.5 per cent. The utilisation has also increased

by more than three-and-a-half times (from 22.6 million hectares to 87.2 million hectares) over the same period. However, **as against the ultimate irrigation potential of 139.89 million hectares, the actual utilisation in 2006-07 was only 87.2 million hectares which is only 62.3 per cent of the potential**. This shows that by proper planning and concerted efforts it is possible to increase the area under cultivation substantially. This alone can considerably increase agricultural production and productivity.

As a response to the gap between the existing irrigation facilities and ultimate irrigation potential, the government has proposed a time-bound plan for rural infrastructure under Bharat Nirman. The Ministry of Water Resources in collaboration with State governments has been entrusted with the responsibility of creating additional 10 million hectares of irrigation capacity through major, medium and minor irrigation projects complemented by ground water development. Of these 10 million hectares, 4.2 million hectares is to be through completion of major and medium irrigation projects and 2 million hectares through enhanced utilisation of completed projects. So more than 60 per cent of additional potential is to be gained through improved efficiency of ongoing and completed works.

Sources of irrigation in India can be divided into the following: (i) Canals, (ii) Wells, (iii) Tanks, and (iv) Others. Approximately 26.3 per cent of the irrigated areas in India is watered by canals. This includes large areas of land in Punjab, Haryana, Uttar Pradesh, Bihar and parts of southern States. Wells are now spread over large areas of Punjab, Uttar Pradesh, Bihar, Rajasthan and Tamil Nadu. Taken together, canals and wells watered 87.3 per cent of net irrigated area in 2008-09. Tank irrigation is resorted to mostly in Tamil Nadu, Andhra Pradesh and parts of West Bengal and Bihar. Rivers of the South do not flow all the year round. Therefore, tanks are constructed for storing water in rainy season which is subsequently used for irrigation purposes. In 2008-09, 3.1 per cent of net irrigated area was watered by tanks.

Development of Irrigation and Government Policy

At the initiation of planning in India in 1950-51, irrigation schemes were divided into three categories — major, costing more than ₹ 5 crore each; medium, costing individually between ₹ 10 lakh and ₹ 5 crore each; and minor, costing less than ₹ 10 lakh each. A new classification was adopted in April 1978. According to this classification, major schemes are defined as those having culturable command area (CCA) of more than 10,000 hectares, medium schemes as those having CCA between 2,000 hectares and 10,000 hectares, and minor schemes as those having CCA of less than 2,000 hectares.

Massive investment was made on irrigation during the planning period. From ₹ 442 crore in the First Plan, the expenditure on irrigation rose to ₹ 36,649 crore in the Eighth Plan. The outlay for irrigation and flood control in Ninth Plan was ₹ 63,682 crore. Of this, ₹ 48,259 crore (76 per cent) was for major and medium irrigation projects and the balance ₹ 15,423 crore (24 per cent) for minor irrigation, Command Area Development (CAD) programme and flood control. The outlay on irrigation and flood control in the Tenth Plan (2002-07) was kept at ₹ 95,743 crore. Total outlay for irrigation in the Eleventh Plan (2007-12) has been kept at ₹ 2,32,311 crore (at current prices). Substantial expenditure has gone in for developing the major and medium irrigation potential especially the major river valley projects like the Bhakra Nangal Project (Punjab), Beas Project (Punjab and Haryana), Hirakud Dam Project (Orrisa), Damodar Valley Corporation (Bihar and West Bengal), Nagarjunasagar Project (Andhra Pradesh and Karnataka), etc. However, minor irrigation continues to occupy an important place as its share in the total irrigation potential of 102.8 million hectares created up to the end of Tenth Plan (2006-07) was 58.8 per cent (60.4 million hectares).

Introduction of the new agricultural strategy and high-yielding varieties programme required substantial irrigation facilities. Consequently, the Fourth Plan recommended early completion of old schemes and introduction of new schemes. The Fifth Plan introduced a comprehensive programme and 38 command area development authorities were set up covering 50 irrigation projects. Total irrigation potential created up to 2006-07 was 102.8 million hectares. As far as

irrigation programmes are concerned, Rural Infrastructure Development Fund (RIDF) was launched in 1995-96 to provide loans to the State governments for financing rural infrastructure projects including irrigation, soil conservation and watershed management, etc. The programme has been extended on an annual basis. In 1996-97, a programme called 'Accelerated Irrigation Benefit Programme' (AIBP) was launched by the Government of India. Under this programme, Centre provides additional Central assistance by way of loans to the States on matching basis for early completion of selected large irrigation and multi-purpose projects. Irrigated area which constitutes only about 45 per cent of the total cultivated area, contributes almost 60 per cent of the foodgrains production in the country. This shows the contribution of irrigation to agricultural output. In fact, the target of doubling foodgrains production in the next 10 years would mainly depend on the availability and performance efficiency of irrigation. What is particularly important from this point of view is the possibility of increasing the water use efficiency which, at present, is only about 25 per cent to 35 per cent in most irrigation systems, with efficiency of 40 per cent to 45 per cent in a few exceptional cases. It is estimated that with a 10 per cent increase in water use efficiency in irrigation systems, an additional 14 million hectares area can be brought under irrigation from the existing irrigation capacities at a very moderate investment.

Some Problems Related to Irrigation

Despite large-scale investment and expansion of irrigation facilities it is a matter of serious concern that about 58 per cent of the total cropped area is still dependent on rains and Indian agriculture, accordingly, continues to be a gamble in rains. The damage done to crops by the irregularity and uncertainty of rains is considerable. Therefore, it is necessary to provide irrigation facilities on an ample scale. However, there are a number of problems related to irrigation and unless they are solved, not much can be expected in this direction. Let us see what these problems are.

1. Delays in completion of projects. A serious problem relates to the delays in completion of the projects. **During the Eleventh Plan, a total of 477 projects including 166 major, 222 medium and 89 extension, renovation and modernisation projects are likely to spillover. The spillover cost of these projects during the Eleventh Plan is estimated to be about ₹ 1,33,746 crore.** Out of the 477 spillover projects into the Eleventh Plan, as many as 144 date back to the Sixth or even earlier plans. The biggest single malady in our major and medium irrigation sector right from the First Plan has been the tendency to start more and more new projects resulting in wanton proliferation of projects, thin spreading of resources and consequent time and cost overrun. There is also inordinate delay in utilising the potential already created. In most of the projects there has been delay in construction of field channels and water courses, land levelling and land shaping. Development of minor irrigation suffered a set-back in Assam, Bihar, Madhya Pradesh, Orissa, Uttar Pradesh and West Bengal on account of comparatively low level of electrification, weak cooperative structure and insufficient flow of institutional credit.

2. Inter-State water disputes. Irrigation is a State subject in India. Development of water resources is, therefore, being planned by States individually taking into account their own needs and requirements. However, all major rivers are inter-State in character. As a result, **differences with regard to storage, priorities and use of water arise between different States and impede the development of water resources of some of the rivers**. Narrow, regional outlook breeds inter-State rivalries over distribution of water supply. Thus, much useful time is lost in senseless dogfights and, in the process, nation is the loser.

3. Regional disparities in irrigation development. Based on the estimated ultimate irrigation potential in the country region-wise, the Ninth Five Year Plan Document estimated that the water resource development in North-eastern region through major, medium and minor schemes is only at the level of 28.6 per cent, whereas in the Northern region, it has reached about 95.3 per cent. This indicates a wide regional variation in the development of irrigation facilities. The other regions Eastern, Southern and Western are at the level of 53.2 per cent, 54.6 per cent and 40 per cent. The national average is 64 per cent. The above figures show that only the Northern region is ahead of the national average.

4. Waterlogging and salinity. Introduction of irrigation has led to the problems of waterlogging and salinity in some of the States. The Working Group constituted by the Ministry of Water Resources in 1991 estimated that **about 2.46 million hectares in irrigated commands suffered from waterlogging.** The States where high water table have been noticed particularly are Punjab, Uttar Pradesh, some parts of Rajasthan and Maharashtra. The Working Group also estimated that 3.30 million hectares had been affected by salinity/alkalinity in the irrigated commands.

5. Increasing costs of irrigation. The costs of providing irrigation have been increasing rapidly over the years. The factors contributing to increase in costs have been the following: (i) non-availability of comparatively better sites for construction in earlier plans; (ii) inadequate preparatory survey and investigations leading to substantial modification in scope and design during construction; (iii) the tendency to start far too many projects that can be accommodated within the funds available for irrigation; (iv) larger provision for measures to rehabilitate people as well as for preservation of environment and ecology; and (v) adoption of more sophisticated but expensive criteria for irrigation project planning in conformity with requirements of external aid agencies.

6. Losses in operating irrigation projects. The water charges have been kept too low to cover even working expenses, not to speak of depreciation charges and contributing even a moderate return on the investments. While just prior to Independence (1945-46) public irrigation schemes showed a surplus after meeting working expenses and other charges, the position deteriorated considerably in the post-Independence period. The annual loss on irrigation systems has increased significantly as the gap between working expenses and the gross receipts from water rates has continued to widen.

7. Ageing of infrastructure and increased siltation. Almost 60 per cent of the total dams of the country are more than two decades old. Canal networks also need annual maintenance. Besides regular maintenance, many older structures need replenishment for which funds are a constraint. Moreover, the Inter-Ministry Task Force on large reservoirs maintains that one-third of their storage capacity has been affected by siltation, resulting in reduced area under irrigation and lowering the life of the dam.

8. Tail-ender deprivation. Farmers who have land at the end of the canal system are called tail-enders. Many of them get neither enough nor timely water. For instance, it has been estimated that in areas with warabandi system in Punjab and Haryana, 70 per cent of the tail-end farmers got 54 per cent to 70 per cent less water than they were entitled to. A major impact of this is the lower agricultural productivity of tail-end farmers, movement to low-value crops or practice of leaving land fallow.

9. Decline in water table. There has been a steady decline in water table in the recent period in several parts of the country, especially in the western dry region, on account of overexploitation of groundwater and insufficient recharge from rainwater.

10. Wastages and inefficiencies in water use. According to C.H. Hanumantha Rao, because of absence of financial accountability on the part of the project authorities and the low rates charged for water, there is a lot of wastage of water and inefficiency in water use. In this context, he quotes a study by Veeraiah and Madankumar which says that out of the water entering upper Ganga Canal, as much as 44 per cent was lost in canal, in distributaries and in village water courses. Of the remaining 56 per cent actually entering the fields, the farmer wasted another 27 per cent in excessive irrigation and thus the water actually used by crops was only 29 per cent. As against this, in the advanced systems of the West, as much as 60-70 per cent of the water diverted in large surface system is available for plant use. Another problem is that because of underpricing of surface water, the farmers at the head-reaches water their fields intensively, leaving the tail-enders with sparse supplies.

5.2.5 SUMMARY

This Chapter lays emphasis on the development and widespread adoption of high-yielding varieties of seeds in combination with use of more quantity of fertilizer, pesticide and irrigation water for raising agricultural productivity. This has ultimately led to occurrence of a great change or revolution in agriculture called green revolution. The unit also highlights the government policy towards providing and encouraging such modern inputs for raising more food-grains to feed the rising population of our country.

5.2.6 SELF ASSESSMENT QUESTIONS

1. Explain in brief the circumstances under which the new agricultural strategy was introduced in lndia.
2. Define High Yielding Variety (HYV) seeds and the impact of its use.
3. Critically examine the application of new agricultural strategy.
4. Analyse the impact of adoption of seed-fertilizer-pesticide-water technology' in Indian agriculture

Key Words

1. **Sustainable Agriculture**: Farming practices that aim to maintain or enhance environmental quality, economic profitability, and social equity for future generations.
2. **Precision Farming**: Utilizing advanced technologies such as GPS, sensors, drones, and data analytics to optimize inputs (such as water, fertilizers, and pesticides) and maximize crop yields.
3. **Cover Crops**: Plants grown primarily to protect and enrich the soil rather than for direct harvest, used to prevent erosion, suppress weeds, and improve soil health.
4. **Crop Rotation**: The practice of growing different types of crops in sequential seasons on the same land to improve soil fertility, control pests and diseases, and reduce reliance on chemical inputs.
5. **Conservation Tillage**: Agricultural techniques that minimize soil disturbance, such as no-till or reduced tillage, to enhance soil structure, water retention, and carbon sequestration.
6. **Organic Farming**: A production system that avoids synthetic fertilizers, pesticides, genetically modified organisms (GMOs), and growth regulators, emphasizing soil health, biodiversity, and ecological balance.

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12. Report on Agriculture Census of India, 1970-71

13. Land Reform in Principle and Practice-Warriner

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5.3 Chapter

GREEN REVOLUTION

Objectives

After completing this chapter, you will be able:

- To know about meaning and importance of green revolution.
- To know about the impact of green revolution on Indian agriculture.
- To understand the changes in attitude of Indian farmers in areas where the new agricultural strategy or technology is being practiced.

Structure:

5.3.0 INTRODUCTION

The food situation in India on the eve of Third Five Year plan was alarming. Even the possibility of importing food-grains had exhausted due to political compulsions as stated earlier in previous chapter and due to uncertainty in world supply of foodgrains especially in the face of increasing demand from food deficit regimes of the world. On the other end, possibility of increasing production by expansion of area had exhausted. The only option left was to raise productivity by intensive cultivation on land. An effort was made to adopt a new agricultural strategy called 'HYV seed-fertilizer-pesticide-water' technology to boost foodgrain production per hectare by resorting to intensive cultivation. With the success of such new technology Indian agriculture experienced a spectacular increase in food- grain production especially in rice and wheat production. The jump in the rate of increase in productivity of these crops was sudden and conspicuous that some economists termed the new change as 'Green Revolution'.

5.3.1 MEANING OF GREEN REVOLUTION

A team of experts sponsored by the Ford Foundation was invited by the Government of India in the latter half of the Second Five Year Plan to suggest ways and means to increase agricultural production and productivity. This necessity

arose out of the need to increase agricultural production in the face of continuing stagnation of production on the one hand, and rapidly increasing demand on the other. The team submitted its report entitled *India's Food Crisis and Steps to Meet It* in April 1959. This report suggested intensive efforts for increasing agricultural production and productivity in *selected regions* of the country with stress on modern inputs, especially fertilisers, credit, marketing facilities, etc. On the basis of the recommendations of this team, the government introduced an intensive development programme in seven districts selected from seven States in 1960 and this programme was named Intensive Area Development Programme (IADP). A district selected under IADP was required to possess qualities such as assured water supply, minimum hazards (like floods, drainage problem, acute soil conservation problem, etc.), well developed village institutions and maximum potentialities for increasing agricultural production within a short span of time. The seven districts selected were West Godavari in Andhra Pradesh, Shahabad in Bihar, Raipur in Madhya Pradesh, Thanjavur in Tamil Nadu, Ludhiana in Punjab, Aligarh in Uttar Pradesh and Pali in Rajasthan — the first four were selected for rice, the next two for wheat and the last one for millets. This programme was later extended to remaining States also by selecting one district from each State for intensive development. In October 1965, the net was widened and 114 districts (out of 325) were selected for intensive development and the programme labelled as Intensive Agricultural Areas Programme (IAAP).

The period of mid-1960s was very significant from the point of view of agriculture. New high-yielding varieties of wheat were developed in Mexico by Prof. Norman Borlaug and his associates and adopted by a number of countries. As a result of these high-yielding varieties, production of wheat per hectare rose to the high-level of 5,000 to 6,000 kg in Mexico in 1965. Taiwan also recorded similar increases. These high-yielding varieties of seeds required proper irrigation facilities and extensive use of fertilisers, pesticides and insecticides. Accordingly, they had to be introduced in the form of a package programme. Because of the promise of increasing agricultural production and productivity held by the new varieties of seeds, countries of South and South-East Asia started adopting them on an extensive scale. **This new 'agricultural strategy' was put into practice for the first time in India in the kharif season of 1966 and was termed High-Yielding Varieties Programme (HYVP). This programme was introduced in the form of a package programme since it depended crucially on regular and adequate irrigation, fertilisers, high-yielding varieties of seeds, pesticides and insecticides.** Initially it was implemented in a total area of 1.89 million hectares. On the eve of the Fourth Plan, the coverage was estimated to be 9.2 million hectares. In 1998-99, total area under HYVP was 78.4 million hectares. This was 62.6 per cent of the total area under foodgrains (data for later years are not available).

5.3.2 IMPACT OF GREEN REVOLUTION

The period after 1966 saw substantial increase in foodgrains production especially wheat production. HYVP depended for its success especially on the availability of proper irrigation facilities and various other inputs. Therefore it could be accepted only in those regions which possessed regular irrigation facilities and only by those farmers who could 'afford' to purchase agricultural inputs. On account of this reason, it is said that the new agricultural strategy led to an increase in inter-regional and interpersonal inequalities.

Increase in Production and Productivity

As a result of new agricultural strategy, foodgrains output increased substantially from 81.0 million tonnes in the Third Plan (annual average) to 202 million tonnes in the Tenth Plan (annual average). In 2010-11, it stood at 241.6 million tonnes. According to Third Advance Estimates for the year 2011-12, the production of foodgrains increased further to 252.6 million tonnes in 2011-12 (the highest level recorded in the entire planning period).

HYVP was restricted to only five crops — wheat, rice, jowar, bajra and maize. Therefore, non-foodgrains were excluded from the ambit of the new strategy. As far as foodgrains are concerned, wheat seems to have

made rapid strides with its production increasing from 11.1 million tonnes in the Third Plan (annual average) to 70.2 million tonnes in the Tenth Plan (annual average). The production of wheat rose to 85.9 million tonnes in 2010-11 and according to the Third Advance Estimates for 2011-12, is estimated to have touched the record level of 90.2 million tonnes in 2011-12 (highest so far). The overall contribution of wheat to total foodgrains has increased from 13 per cent in 1950-51 to 35.7 per cent in 2011-12. Whereas the index of foodgrains production in India, with triennium ending 1981-82 as the base, increased from 87.9 in 1970-71 to 195.5 in 2010-11, that of wheat increased from 67.7 in 1970-71 to 244.1 in 2010-11. Also, as is clear from Table 1 of the Chapter on 'Agricultural Production and Productivity Trends', while the yield per hectare of all foodgrains which was 710 kgs in 1960-61 increased to 1,921 kgs in 2010-11, that of wheat rose from 851 kgs to 2,938 kgs over the same period. It is on account of these reasons that **wheat has remained the mainstay of the Green Revolution over the years**.

The production of rice which had increased slowly in the early period of the Green Revolution has started picking up of late. The average annual production of rice rose from 35.1 million tonnes in the Third Plan (annual average) to 85.6 million tonnes in the Tenth Plan (annual average). It stood at 95.3 million tonnes in 2010-11. According to the Third Advance Estimates for 2011-12, the production of rice has increased further to 103.4 million tonnes in 2011-12. The production of coarse cereals — jowar, bajra and maize — continued to remain static or moved very slowly upwards for most of the period of green revolution. Moreover, as is clear from Table 1 of the Chapter on 'Agricultural Production and Productivity Trends', the production of these crops has been subject to wide yearly fluctuations during a number of years. It is only in last three-four years that the production and productivity of maize has increased considerably. As far as pulses are concerned, their production has remained more or less static for most of the period of planning. For instance, it was 11.7 million tonnes in Second Plan (annual average), 13.1 million tonnes in the Ninth Plan (annual average) and again 13.1 million tonnes in the Tenth Plan (annual average). This is less than the requirement of pulses in India estimated at about 17 million tonnes. In fact, the per capita net availability of pulses declined from 69 grams per day in 1961 to just 31.6 grams per day in 2010. This fall in per capita net availability of pulses is a cause for concern as pulses provide the most valuable ingredient of protein in diet and are 2-3 times richer in protein than most of the cereals. However, what is encouraging to note is the fact that for the first time in the entire period of planning, the production of pulses breached the 17.0 million tonnes requirement mark in 2010-11 and stood at 18.1 million tonnes in this year. It is estimated at 17.0 million tonnes in 2011-12.

Let us now consider oilseeds. The bulk of the vegetable oil production in India is derived from nine cultivated oilseeds, namely, groundnut, rapeseed/mustard, sesamum, safflower, nigerseed, soyabean, sunflower — forming the edible group — and linseed and castorseed forming the inedible group. The total production of oilseeds averaged 8.3 million tonnes in the Fourth Plan (annual average) and 11.4 million tonnes in the Sixth Plan (annual average). To achieve self-sufficiency in edible oils, the government launched a series of measures towards the end of the Sixth Plan and the Seventh Plan. These included National Oilseeds Development Project (NODP) started in 1985-86, Technology Mission on Oilseeds (TMO) started in May 1986 and Oilseeds Production Thrust Project (OPTP) launched in 1987-88 to accelerate the production of four major oilseeds, namely groundnut, rapeseed/mustard, soyabean and sunflower. In 1989-90, the government announced its 'price band' policy for fixing wholesale price band for oil. This policy sought to fix the procurement prices of groundnut and rapeseed at least 40 per cent above the levels recommended by the Commission for Agricultural Costs and Prices (CACP). As a result of these policies, area under oilseeds expanded considerably leading to a substantial increase in oilseeds production. In fact, the average annual production of oilseeds rose from 11.4 million tonnes in the Sixth Plan to 21.2 million tonnes in the Ninth Plan and further to 23.2 million tonnes in the Tenth Plan. In 2010-11, the production of oilseeds touched the record production level of 31.1 million tonnes and is estimated at 30.1 million tonnes in 2011-12.

Table 5.3 gives all-India compound growth rates of production and yield of crops for the entire period of planning. This period can be divided into two parts — 1949-50 to 1964-65 (which can be termed the pre-green revolution period). and the period since 1967-68 (the green revolution period). The latter period is sub-divided into four periods – 1967-68 to 1980-81, 1980-81 to 1989-90, 1990-91 to 1999-2000 and 2000-01 to 2010-11 – to indicate clearly the production and productivity trends in different phases of the green revolution.

Table 5.3

All-India Compound Growth Rates of Production and Yield of Some Crops, 1949-50 to 2010-11

(Base T.E. 1981-82 = 100)
(per cent per annum)

Crop	Pre-Green Revolution Period		Green Revolution Period							
	1949-50 to 1964-65		1967-68 to 1980-81		1980-81 to 1989-90		1990-91 to 1999-2000		2000-01 to 2010-11	
	Production	Yield	Production	Yield	Production	Yield	Production	Yield	Production	Yield
Rice	3.5	2.3	2.2	1.5	3.6	3.2	2.0	1.3	1.5	1.6
Wheat	4.0	1.3	5.7	2.6	3.6	3.1	3.6	1.8	2.2	0.9
Jowar	2.5	1.5	2.0	3.2	0.3	1.3	–3.1	0.5	–0.5	2.8
Bajra	2.3	1.2	–0.4	0.8	0.0	1.1	1.0	2.4	2.4	2.7
Maize	3.9	1.2	0.0	0.0	1.9	2.1	3.3	2.3	5.7	2.8
Total Pulses	1.4	–0.2	–0.4	–0.7	1.5	1.6	0.6	0.9	3.4	1.9
Total Foodgrains	2.8	1.4	2.2	1.3	2.9	2.7	2.0	1.5	2.1	2.9
Sugarcane	4.3	1.0	2.6	0.8	2.7	1.2	2.7	1.1	1.6	0.5
Total Oilseeds	3.2	0.3	1.6	0.7	5.2	2.4	1.6	1.2	4.6	3.6
Non-Foodgrains	3.7	0.9	2.3	1.2	3.8	2.3	2.7	1.1	3.7	2.5
All Crops	3.2	1.2	2.2	1.3	3.2	2.6	2.3	1.3	2.5	3.3

Source: Government of India, Ministry of Agriculture, *Agricultural Statistics at a Glance,* 1997 (New Delhi, 1997), Table 15.2 (b) and *Agricultural Statistics at a Glance,* 2011 (New Delhi, 2011), Table 6.1, p. 200.

As is clear from Table 5.3, the rate of growth of wheat production which was 4.0 per cent per annum in the pre-green revolution period (1949-50 to 1964-65) shot up to 5.7 per cent per annum during the initial phase of the green revolution, i.e., 1967-68 to 1980-81 while the rate of growth of productivity doubled over the period from 1.3 per cent per annum to 2.6 per cent per annum. In fact, it was due to the adoption of new high yielding varieties of seeds in the irrigated areas in certain regions of the country (particularly Punjab, Haryana and Western Uttar Pradesh) that wheat production increased considerably in the first sub-period of the green revolution. Other crops lagged considerably behind. Thus, in the initial phase, the green revolution was, in fact, wheat revolution. However, other crops also started picking up in the decade of 1980s. For instance, as is clear from Table 5.3, rice and oilseeds did considerably better in 1980s as compared with the period 1967-68 to 1980-81. The growth rate of rice production rose from 2.2 per cent per annum during 1967-68 to 1980-81 to 3.6 per cent per annum during 1980-81 to 1989-90. During the same period, the productivity of rice also increased significantly from 1.5 per cent per annum to 3.2 per cent per annum. The most remarkable growth during 1980s was registered by oilseeds whose annual growth rate of production shot up from a meagre 1.6 per cent during 1967-68 to 1980-81 to as high as 5.2 per cent per annum during 1980-81 to 1989-90. The growth rate of productivity

of oilseeds also registered a significant increase from 0.7 per cent per annum during 1967-68 to 1980-81 to 2.4 per cent per annum during the period of 1980s. As stated earlier, this was due to a number of steps taken by the government to boost the production of oilseeds. While the production and productivity growth rates of pulses were both negative at –0.4 per cent per annum and –0.7 per cent per annum respectively during 1967-68 to 1980-81, they registered a positive rate of growth of 1.5 per cent per annum and 1.6 per cent per annum respectively during 1980s. Thus, pulses were able to make a turnaround. **This shows that during the period of 1980s, green revolution started spreading to more crops.** This tempted C.H. Hanumantha Rao to claim in an article published in 1992 that "The major inter-crop imbalances in growth, witnessed in the early years of the green revolution, are getting redressed to some extent in the recent period." Because of the extension of new technology to other crops and its expansion to many other parts of India during 1980s (as against the period 1967-68 to 1980-81 when it was limited to wheat and wheat growing areas like Punjab, Haryana and Western Uttar Pradesh), this period has been termed as the period of **maturing of Green Revolution** by G.S. Bhalla and as **wider technology dissemination period** by Eleventh Five Year Plan, 2007-12. What is significant from the point of view of economic growth is the fact that ***t*he sources of agricultural growth changed from area expansion in the pre-green revolution period to yield growth in the later periods.** For example, during 1949-50 to 1964-65, the contribution of area growth to output growth was 50.16 per cent while that of yield growth was only 38.41 per cent. The introduction of new technology during the mid-1960s resulted in increasing the yield levels of major corps, particularly wheat and rice, thereby making the yield growth the dominant source of growth of output. Thus, during 1962 to 2003-06 the yield growth accounted for 85.2 per cent of growth of output, while the contribution of area growth was only 14.4 per cent.

Deceleration in Agricultural Growth Rates in the Reform Period. After registering impressive performance during 1980s, the agricultural growth decelerated in the economic reform period (commencing in 1991). As is clear from Table 5.3, the rate of growth of production of foodgrains fell from 2.9 per cent per annum in 1980s to 2.0 per cent per annum in 1990s and stood at 2.1 per cent per annum in first decade of the present century (2000-01 to 2010-11). If we consider all crops together, the rate of growth of production fell from 3.2 per cent in 1980s to 2.3 per cent per annum in 1990s and stood at 2.5 per cent per annum during the period 2000-01 to 2010-11. However, the rate of growth of productivity, both in the case of foodgrains and all crops, after falling in 1990s, improved in the period 2000-01 to 2010-11 (see Table 5.3). The implication of this observation is that output growth in the economic reforms period would have been still lower, had the productivity not accelerated in the period 2000-01 to 2010-11. **The period since 1991, therefore, emerges as a kind of watershed in time when growth in Indian agriculture, resurgent from the middle 1960s, was arrested.** There was a prolonged deceleration in agricultural growth since the mid-1990s and over the period 1997-98 to 2004-05, the rate of growth of agricultural GDP was only 2.0 per cent per annum (down from 3.5 per cent per annum during 1981-82 to 1996-97). As shown by Eleventh Five Year Plan document, this decelaration, although most marked in rainfed areas, occurred in almost all States and covered almost all major sub-sectors, including those such as horticulture, livestock, and fisheries where growth was expected to be high. Consequently, growth of agricultural GDP was much below the target of 4.0 per cent per annum set in both Ninth and Tenth Plans (it was only 2.3 per cent per annum in the Tenth Plan). The Eleventh Plan also kept a target of 4 per cent per annum growth in GDP from agriculture and allied sectors. According to the *Mid-term Appraisal of the Eleventh Five Year Plan*, "This target is not only necessary to achieve the overall GDP growth target of 9 per cent per annum without undue inflation, it is an important element of 'inclusiveness' since the global experience of growth and poverty reduction shows that GDP growth originating in agriculture is at least twice as effective in reducing poverty as GDP growth originating outside agriculture." However, agricultural growth in the Eleventh Plan is expected to be 3.3 per cent per annum — somewhat less than the target of 4 per cent per annum.

Causes of Deceleration in Agricultural Growth. The main reasons for the deceleration in agricultural growth in the post-reform period have been: (1) significant deceleration in the public and overall investment in agriculture,

(2) shrinking farm size, (3) failure to evolve new technologies, (4) inadequate irrigation cover, (5) inadequate use of technology, (6) unbalanced use of inputs, (7) decline in plan outlay, and (8) weaknesses in credit delivery system.

1. Significant deceleration in investment. According to G.S. Bhalla, the most important reason for the deceleration in the growth of agriculture during the reform period has been a significant deceleration in the public and overall investment in agriculture during this period. As shown, total investment in agriculture as a proportion of GDP declined from 9.9 per cent during 1990-91 to 6.5 per cent in 2007-08 and stood at 7.7 per cent in 2009-10. The share of public sector investment in total investment in agriculture which was 29.6 per cent in 1990-91 fell to only 17.7 per cent in 2009-10. The collapse of public sector investment in agriculture is a serious cause of concern because of the potential negative impact on agricultural growth. For example, Gulati and Bathla have estimated that a 10 per cent decrease in public investment leads to a 2.4 per cent annual reduction in agricultural GDP growth.

2. Failure to evolve new technologies. India was able to avail of the potential of seed-fertiliser technology because of favourable international research collaboration. However, the country has failed to make a major breakthrough in frontier areas like biotechnological research. "Lack of investment in research and technology in agriculture has resulted in the non-availability of any new cost reducing technology in agriculture and has led to declining input use efficiency." Balakrishnan, Golait and Pankaj Kumar have estimated that the growth of public expenditure on research and education, at constant prices, which was 9.5 per cent in 1970s and 6.3 per cent in 1980s fell to only 4.8 per cent over the period 1990-2005. In the case of extension services, the slowdown was particularly sharp — from 7.0 per cent in 1980s to just 2.0 per cent over the period 1990-2005.

3. Shrinking farm size. The farm rise is persistently shrinking in India. As noted by Pulapre Balakrishnan, Ramesh Golait and Pankaj Kumar, this is a long-term trend and unless addressed, can have permanent adverse consequences for the agricultural sector, impinging upon its prospects. While 39.1 per cent holdings were marginal holdings (i.e., less than one hectare in size) in 1960-61, 64.8 per cent of holdings fell under this category in 2005-06. The area operated by these holdings increased from only 6.9 per cent in 1960-61 to 20.2 per cent in 2005-06. If small holdings (i.e., between one hectare and two hectares) are added to marginal holdings, these holdings together rose from 61.7 per cent in 1960-61 to as high as 83.3 per cent in 2005-06 and area operated by them rose from 19.3 per cent to as high as 41.1 per cent over the period. This is a clear indication of shrinking farm size in Indian agriculture. As noted by Balakrishnan, Golait and Pankaj Kumar, "there is reason to believe that smaller holding size makes it more difficult for the majority of Indian farms to access new technology and adopt more efficient forms of farm production organisation as their capacity to leverage credit is reduced. More capital-intensive investment in what is called the 'land improvement factor' is very likely inconceivable for the largest number of Indian farmers today due to their meagre asset base. **The slower growth of yield since 1991 may, at least to an extent, be related to this aspect.**"

4. Inadequate irrigation cover. According to *Report on Currency and Finance, 2001-02,* inadequate irrigation cover for most of the crops is an important constraining factor in speedy adoption of improved technology. The main points mentioned in the Report in this context are as follows: (i) only 40 per cent of the gross cropped area in the country was under irrigation in 2002-03; (*ii*) the share of public expenditure on irrigation and flood control to total public expenditure has declined over the years; (iii) irrigation coverage across various States is quite skewed (for instance, while 98.0 per cent of gross cropped area in Punjab was irrigated in 2008-09, in Maharashtra only 19.0 per cent of cultivated area was irrigated); and (iv) the distribution of irrigation facilities across crops is equally skewed (for instance, while 91.0 per cent of area under wheat and 59.0 per cent area under rice was irrigated in 2008-09, only 16 per cent area under pulses and 27 per cent area under oilseeds was irrigated in that year). The low irrigation cover for various crops has led to severe rainfall dependency (the correlation between production and rainfall was particularly high for pulses and oilseeds). "This rainfall dependence of Indian agriculture imparted variability to production in the latter part of the 1990s, when the spatio-temporal distribution of rainfall remained largely skewed."

5. Inadequate adoption of technology. One of the main reasons for the low levels of yields in Indian agriculture has been the unsatisfactory spread of new technological practices, including the adoption of High-Yielding Varieties (HYV) of seeds and usage of fertilisers and pesticides, and inadequate spread of farm management techniques and other practices such as soil conservation and crop rotation. For instance, the area under HYV seeds, which recorded a trend growth rate of 8.1 per cent per annum in the 1980s, decelerated to 4.4 per cent per annum in the 1990s. Availability of quality seeds is inadequate and usage of high yielding hybrid seeds is very low and occurs only in the case of a few crops. Similarly, there was a decline in growth rate of fertilisers to 4.3 per cent in the 1990s from 7.8 per cent in the 1980s, with wide variations across States.

6. Unbalanced use of inputs. Various subsidies on inputs have resulted in skewed and unsustainable use of inputs. For instance, subsidies on urea have resulted in unbalanced use of Nitrogen (urea), Phosphorus (phosphate) and Potassium (potash) fertilisers and aggravated deficiency in use of micronutrients. Subsidies on electricity and diesel have led to the cultivation of water intensive crops such as rice and wheat, with skewed consumption of nitrogenous fertilisers leading to an unsustainable cropping pattern. Moreover, subsidies on electricity and diesel have encouraged big farmers to install large capacity pumps for drawing water from ground water table. This has enabled them to draw water away from the water table adjoining their farms, and at a faster rate than those with smaller pumps. This tendency has had an adverse impact on the level of water table and the ability of small and marginal farmers to irrigate their farms.

7. Decline in plan outlay. Another manifestation of neglect of agriculture is that the actual expenditure on agriculture, irrigation and flood control as a proportion of actual total plan expenditure is declining rapidly over the plans. It declined from 37 per cent during the First Plan to only 19.8 per cent in the Ninth Plan and 18.7 per cent in the Tenth Plan. According to G.S. Bhalla, "The decline in planned outlay has resulted in gradual deterioration of rural infrastructure like irrigation, canals, roads, warehouses, etc. This has resulted in reducing the potential for future growth."

8. Credit delivery system. Lack of adequate credit for investment is an important impediment to expansion of acreage under HYV seeds and the use of optimum dose of inputs. According to the *Report on Currency and Finance,* 2001-02, the credit delivery scenario at the disaggregated level in the 1990s, was a cause of concern as there was a deceleration in the scheduled commercial banks' disbursements of direct finance to small farmers from 15.1 per cent in the 1980s to 11.0 per cent in the 1990s. Similarly, the annual compound growth rate of direct finance (disbursements) to marginal farmers, decelerated to 13.0 per cent from 18.1 per cent during the same period. The annual compound growth rates of medium/long-term loans disbursed to agriculture and allied activities (direct advances) declined to 9.7 per cent in the 1990s from 11.5 per cent in the 1980s. This is likely to have had an adverse impact on private sector capital formation in agriculture.

Regional Dispersal of Green Revolution and Regional Inequalities

As stated earlier, **HYVP was initiated on a small area of 1.89 million hectares in 1966-67 and even in 1998-99 it covered 78.4 million hectares which is only about 40 per cent of the gross cropped area. Naturally, the benefits of the new technology remained concentrated in this area only. Moreover, since green revolution remained limited to wheat for a number of years, its benefits mostly accrued to areas growing wheat**. Even this is an overstatement because within the area under wheat in HYVP, only regions having assured water supply and a package of other inputs (on whose availability the success of HYVP crucially depends) derived benefits from the new agricultural strategy. These were the regions of Punjab, Haryana and western Uttar Pradesh. As a result, the benefit of new technology was limited to wheat and the north-west region of the country in the initial period of the green revolution. However, gradually the new technology spread to rice and some other crops and its geographical

coverage extended from the north- western region to many other parts of the country. According to G.S. Bhalla and Gurmail Singh, **"By 2003-06, despite considerable inter-State variations, most States in India were able to share the gains of the new technology. The deepening and extension of new technology led to significant growth of agricultural output."** Table 5.3 reproduced from the study of G.S. Bhalla and Gurmail Singh clearly brings out the regional spread of green revolution over time.

Table 5.3 presents the growth performance of States as far as agricultural output in concerned. Column (3) presents agricultural growth in the initial period of green revolution (1962-65 to 1980-83), column (4) presents agricultural growth in the period of maturity of green revolution (1980-83 to 1990-93), and column (5) presents agricultural growth in post-liberalisation period (1990-93 to 2003-06). The last column, i.e., column (6) presents information over the entire period 1962-65 to 2003-06.

Initial Period of Green Revolution (1960-65 to 1980-83). During 1962-65 to 1980-83, all States in the north-western region, in particular Punjab and Haryana, registered high growth rates of agricultural output. The rate of growth of agricultural output in Punjab was as high as 5.58 per cent per annum while that of Haryana was 3.74 per cent per annum. As a result, the rate of growth of agricultural output in the north-west region was much higher than in other regions. In the eastern region except for Assam, the growth performance of other States was rather modest with Bihar recording a rate of growth of only 0.27 per cent per annum. In the central region, the crop output was hardly influenced by the new technology and agricultural output in that region was characterised by sharp weather-induced year-to-year fluctuations. In the southern region, all States, except Tamil Nadu, were able to register medium growth rates of output.

Maturing of Green Revolution (1980-83 to 1990-93). As noted by G.S. Bhalla and Gurmail Singh, **"the period from 1980-83 to 1990-93 marks a turning point in India's agricultural development."** At the all-India level, the growth rate of crop output accelerated from 2.24 per cent per annum to 3.37 per cent during 1980-83 to 1990-93. A look at the Table shows clearly that **during the period of 1980s agricultural growth permeated to all regions in India.** An important development was the acceleration of growth in the eastern region. In West Bengal, the growth rate increased to 5.98 per cent per annum during 1980-83 to 1990-93 as compared with a growth rate of 1.4 per cent per annum during 1962-65 to 1980-83. Bihar and Orissa also recorded an acceleration in their output growth rates. The central region also recorded an accelerated growth during this period.

Table 5.4
State and Regionwise Growth Rate of Agricultural Output

S. No.	State	Annual Compound Growth Rate			
		1980-83/ 1962-65	1990-93/ 1980-83	2003-06/ 1990-93	2003-06/ 1962-65
(1)	(2)	(3)	(4)	(5)	(6)
1	Haryana	3.74	5.04	2.30	3.59
2	Himachal Pradesh	2.01	2.74	1.01	1.87
3	Jammu & Kashmir	4.31	0.17	0.69	2.13
4	Punjab	5.58	4.22	1.64	3.98
5	Uttar Pradesh	2.67	3.06	1.40	2.36
	North West Region	3.39	3.55	1.58	2.85
6	Assam	2.38	2.42	0.67	1.84
7	Bihar	0.27	2.07	0.26	0.70

8	Orissa	1.91	2.86	–0.67	1.31
9	West Bengal	1.43	5.98	2.39	2.83
	Eastern Region	1.30	3.61	1.00	1.76
10	Gujarat	2.52	0.90	5.33	3.01
11	Madhya Pradesh	1.59	4.52	2.52	2.59
12	Maharashtra	1.91	1.92	2.13	1.98
13	Rajasthan	2.59	6.06	3.21	3.62
	Central Region	2.06	3.27	3.15	2.70
14	Andhra Pradesh	2.41	3.40	1.76	2.44
15	Karnataka	2.46	3.66	0.97	2.27
16	Kerala	1.28	1.77	–0.80	0.73
17	Tamil Nadu	0.90	4.06	–1.46	0.90
	Southern Region	1.82	3.41	0.48	1.78
	All-India	2.24	3.37	1.74	2.36
	Coefficient of Variation	54.19	51.07	118.59	43.95

Source: G.S. Bhalla and Gurmail Singh, "Economic Liberalisation and Indian Agriculture: A Statewise Analysis", *Economic and Political Weekly,* December 26, 2009, Table 1, p. 35.

The question is: what were the causes of the upturn of growth in the central region and the sharp transition in the growth environment in the eastern region? In this context, one may point out many factors associated with the wider adoption of new technology such as expansion in irrigation and extension services, development of infrastructure required for distribution of seeds, fertilisers, credit, etc. A study by S.D. Sawant and C.V. Achutan particularly refers to the role of irrigation. This study reveals that whereas the expansion in net irrigated area in the eastern region was just 3 per cent between 1970-81, it was as high as 40 per cent between 1980-91. As a result, the share of the region in all-India increase in irrigation jumped from 2 per cent in the 1970s to 24 per cent in the 1980s. This must have contributed significantly in improving growth environment in addition to increased spread of new technology. J. Mohan Rao and Servaas Storm have pointed out that the significant growth registered by West Bengal could be linked up to the relatively successful agrarian reforms undertaken by the Left Front government. As far as the central region is concerned, net irrigated area in this region expanded significantly through the 1970s (by 37 per cent) and the 1980s (by 27 per cent). Though the pace of expansion reduced in the latter decade, the region continued to have significant share in the all-India increase in irrigation which was 56 per cent in 1970-81 and 43 per cent in 1980-91 as against the share in aggregate net sown area being only 36.5 per cent.

The southern region also exhibited a marked acceleration in growth rate. From 1.82 per cent per annum during 1962-65 to 1980-83, the growth rate in this region accelerated to 3.41 per cent per annum during 1980-83 to 1990-93. According to Sawant and Achutan, the main reason for this was the faster growth of non-foodgrains. The performance of almost all non-foodgrains in all the four States in this region during 1980-83 to 1990-93 was satisfactory and far better than of foodgrains as a whole, as also than their own performance in the earlier period.

Post-liberalisation Period (1990-93 to 2003-06). Agricultural growth during 1990-93 to 2003-06 reflects the impact of economic reforms on agricultural performance. As is clear from Table 3, this period is marked by sharp deceleration in agricultural growth rate at the all-India level and in all regions. At the all-India level, the output growth decelerated from 3.37 per cent per annum during 1980-81 to 1990-93 to only 1.74 per cent per annum during 1990-93

to 2003-06. At the regional level, during the same period, the growth rate of agricultural output decelerated from 3.55 per cent per annum to 1.58 per cent per annum in the north-western region, from 3.61 per cent per annum to 1.00 per cent per annum in the eastern region, from 3.27 per cent per annum to 3.15 per cent per annum in the central region and from 3.41 per cent per annum to only 0.48 per cent per annum in the southern region. All States, except Gujarat and to some extent, Maharashtra, registered a sharp decline in their output growth rates in the post-reform period. Gujarat registered a massive increase in the rate of growth of agricultural output from just 0.90 per cent per annum during the period 1980-83 to 1990-93 to 5.33 per cent per annum during the period 1990-93 to 2003-06. According to G.S. Bhalla and Gurmail Singh, this "remarkable performance was primarily because of the very rapid spread of Bt cotton in the State during the last triennium".

Interpersonal Inequalities

Whether interpersonal inequalities have increased or not due to the adoption of new agricultural strategy, is not easy to determine. This is due to the reason that studies conducted by different scholars have yielded different results. Probably this due to the reason that the studies relate to different regions/States, different time-periods and use different sources of data. Moreover, the conclusions are often coloured by the preferences and biases of the researchers. However, **there seems to be a general consensus that in the early period of the green revolution, large farmers benefited much more from new technology as compared with the small and marginal farmers. This was not unexpected as the new technology called for substantial investments which were generally beyond the means of a majority of this country's small and marginal farmers**. Only relatively rich farmers who were in a position to 'afford' the new strategy which is a package programme involving the use of high-yielding varieties of seeds in combination with other inputs like irrigation, fertilisers, pesticides, etc. adopted it. This shifted the advantage of productivity per acre in favour of big farmers. This advantage, in turn, got reflected in the distribution of benefits from new technology in the regions that adopted it. Such trends were clearly indicated in the studies conducted by Francine R. Frankel, G.R. Saini and Pranab Bardhan covering the early years of the green revolution. There is a difference of opinion as far as the later phase of the green revolution is concerned. According to some economists with the passage of time, the supply of institutional credit to small farmers improved (although a major share continued to be cornered by the large farmers). As a result of this and also because of improved extension services, small farmers started adopting new technology rapidly. Thus, over a period of time, green revolution started benefiting small farmers as well. Usha Nagpal, George Blyn, John Richard Westly, G.S. Bhalla and G.K. Chadha subscribe to this view. For instance, in a study on the effect of green revolution on the small and marginal farmers conducted for Punjab, G.S. Bhalla and G.K. Chadha concluded that "the advent of the green revolution in Punjab has brought overall prosperity to its peasantry." However, the same study admitted that about one-third of the marginal farmers continue to live below the poverty line. In a study published recently, Francine R. Frankel has argued that **larger farmers have continued to make greater absolute gains in income because of lower costs per acre and by reinvesting earnings in non-farm and farm assets, including purchase of land from the smaller cultivators who could not make the transition to the new technology**. As a result of the impact of the new agricultural strategy on rural income disparities among States, and the growing differential in compound growth rates between districts, the gap between households operating medium and large holding on the one hand (above 2 hectare) and households cultivating marginal and small holdings on the other hand, widened. As a result, "the size structure of operational holdings at the all-India level became further skewed, as a large majority of operational holdings clustered in the categories of marginal and small farmers." For example, the percentage of marginal holdings (less than one hectares) rose from 54.6 per cent in 1976-77 to 57.8 per cent in 1985-86 and 62.3 per cent in 2001-01. The percentage of small and marginal holdings together (i.e., less than 2 hectares) rose from 72.7 per cent in 1976-77 to 76.2 per cent in 1985-86 and further to 81.3 per cent in 2000-01.

As far as the fate of agricultural workers is concerned, all observers agree that money wages have increased. However, there is difference of opinion regarding the trends in real wages. In his study *Land, Labour and Rural Poverty* (1984) P.K. Bardhan used data of Rural Labour Enquiries for 1964-65 and 1974-75 and concluded that the average daily earnings in agricultural operations by men belonging to agricultural labour households had declined by 12 per cent in real terms for the whole of rural India. At the State level real wages declined in all the States, except in Punjab, Haryana, Uttar Pradesh, and Jammu & Kashmir (where it rose) and Karnataka (where it stayed the same). However, Parthasarathy pointed out that the latter year (1974-75) was not a good agricultural year and total annual income including non-wage income may give a different picture. In his pioneering study "Trends in Real Wages in Rural India 1880-1980", Deepak Lal shows that real wage rates increased very slowly over the years 1970 to 1979. In many States like Karnataka, Gujarat, Punjab and Tamil Nadu, the real wage rates actually fell. However, some economists have argued that inter-State disparities in agricultural wages started declining since the mid-seventies. For instance, A.V. Jose concludes in his study that the disparities in real wages in agriculture between Punjab on the one hand and Bihar on the other, started coming down since the mid-1970s.

Utsa Patnaik has studied the trends in total real wages over the period 1970-71 to 1984-85 using various deflators. The study shows that over this entire period covering 15 years, total real wages increased by only 14.1 per cent, whereas if the period 1978-79 to 1984-85 is taken, there was an absolute decline of 7.9 per cent (using wholesale price index and the implicit NDP deflator). However, if instead of wholesale price index, Consumer Price Index Number for Agricultural Labourers (CPIAL) is used, the rise in total real wage bill over 1970-71 to 1984-85 comes out to be 43 per cent. Over the period 1978-79 to 1984-85 the increase is merely 2 per cent and hence insignificant. According to Patnaik, "if this is the case with the total real wage bill, what has been happening to real earnings per worker can be easily imagined". For some years during recent times, the *Economic Survey* of the Government of India carried data for changes in real wages for agricultural labourers for different States. These data shows that the average real wages of agricultural labourers declined by 0.4 per cent in 1994-95 and by 1.56 per cent in 1998-99. However, taking the eight-year period 1992-2000 as a whole, the all-India average real wages for the unskilled agricultural workers rose at an average rate of about 3 per cent per annum. What is worth noting in this context is that there are wide fluctuations among the various States over the years raising questions about the reliability of these data.

In their study on agricultural wages in India (covering the period 1964-65 to 1999-2000), Pallavi Chavan and Rajshree Bedamatta have found that while there was a striking rise in the growth of daily real earnings across all States between 1983 and 1987-88, there was a slowdown in the rate of growth of real earnings for both male and female agricultural labourers across a majority of the States between 1987-88 and 1993-94, and further between 1993-94 and 1999-2000. Moreover, there was a rising trend in the variations in real wages across districts in the 1990s. They also found that the differences between the average wages of male and female agricultural labourers have widened over the years (particularly after 1987-88). In a recently published study, Mukesh Eswaran, Ashok Kotwal, Bharat Ramaswami and Wilima Wadhwa have found that at the all-India level, weekly average wages grew by 68 per cent between 1983 and 2004-05. This translates into an annualised rate of growth of 2.5 per cent per year. The average daily earnings grew faster – 74 per cent between 1983 and 2004-05 – or at an annualised rate of 3.33 per cent. The rates of growth were higher in the first decade – 1983 to 1993-94 – with annualised rates of 3.3 per cent for weekly earnings and 3.2 per cent for daily earnings. **Both these rates slowed down appreciably in the next decade – 1993 to 2004-05 – to 1.8 and 2.3 per cent per year, respectively. And in the last five years – 1999 to 2004 – these rates slowed down further to 1.1 per cent (weekly earnings) and 0.6 per cent (daily earnings).**

The Question of Labour Absorption

Although there is difference of opinion amongst economists regarding the effects of new agricultural strategy on interpersonal inequalities and real wages of agricultural labourers, there is a general consensus that **the adoption of**

new technology has reduced labour absorption in agriculture. A study by Sheila Bhalla indicates that the employment elasticity of crop output which stood at 0.77 for 1968-69 to 1978-79 declined to 0.59 between 1971-72 to 1983-84 (it is presently around 0.5). In fact, the elasticity for cereals was as low as 0.26 in the later period mainly due to the elasticity for wheat turning negative in every major producing State. According to C.H. Hanumantha Rao, the uneven regional growth was mainly responsible for the low absorption of labour within agriculture. In a large number of States, especially in those regions where there was abundant availability of labour, the growth of output was too slow to generate adequate employment opportunities. In high growth regions, labour was not plentiful and wage rates were high. The sudden rise in the demand for labour in these areas induced mechanisation and labour-saving practices in general. This happened despite the use of migrant labour from the less developed regions for certain operations.

Though Rao's argument might be correct in certain instances, the fact of the matter is that the use of mechanisation was prompted by considerations of profitability. In a bid to boost their profits, large farmers of Punjab, Haryana and Western Uttar Pradesh adopted the use of labour-saving machinery and techniques on a large scale. This was bound to displace labour. In an earlier study conducted for Forozepur (in Punjab), C.H. Hanumantha Rao had estimated that tractorisation displaces 20 to 30 per cent of the total human labour-days per cropped acre on account of tillage and transportation. A mechanical thresher displaces around 15 per cent labour and harvester combines around 25 per cent in addition to that displaced by mechanical threshers.

In recent years, a significant development in the pattern of rural labour absorption has been a shift away from crop production and into rural non-farm activities like agro-processing industries and other rural industries. These industries have generally been set up by the investments of the rural rich with their superior access to capital and markets and they develop along capitalist lines. As noted by J. Mohan Rao, the growth of rural industries is positively related to faster agricultural growth. Much of this growth tends to concentrate in non-traditional rural industries displaying higher labour productivity and a higher incidence of wage labour.

Undesirable Social Consequences

Some micro level socio-economic studies of green revolution areas have revealed certain undesirable social consequences of the green revolution. **Many large farmers have evicted tenants as they now find it more profitable to cultivate land themselves. Thus, a large number of tenants and share-croppers have lost their lands and have been forced to join the ranks of agricultural labourers**. Wet lands have also attracted outsiders (non-agriculturists from nearby towns) to invest capital in buying farms. Because of these tendencies "the polarisation process that accentuates the rural class differences has been further intensified by the green revolution."

The health hazards of the new technology can also not be lost sight of. Increased mechanisation that has accompanied the modernisation of farm technology in green revolution areas carries with it the risk of incapacitation due to accidents. Many farm workers in green revolution areas have lost their limbs while working on wheat threshers and some have even lost their lives. What is an additional cause for concern is the fact that the attitude of the government towards the problems of treatment and rehabilitation of victims of accidents on farm machines is that of total ambivalence. Very meagre compensation is provided to the victims. The government neither takes effective steps to prevent farmers from using substandard threshers nor does it prevail upon them to give rightful and adequate compensation to victims or to protect potential victims from such hazards.

The health hazards for the rural agricultural workers are not confined to incapacitation resulting from machine accidents. **The agricultural work in green revolution areas has been rendered even more injurious by the increasing use of poisonous chemical sprays for plant protection on a large scale**. The high yielding varieties of seeds (which are an indispensable part of the green revolution strategy) are highly susceptible to diseases, and in

India (and other third world countries adopting this strategy) poisonous pesticides are used both extensively and intensively for plant protection without realising the health hazards that follow for agricultural labour. Surveys show that victims of such acute poisoning are invariably agricultural workers, and only rarely rich farmers themselves. It is surprising that no legal protection is available to the victims of poisoning accidents on agricultural farms as the Workmen Compensation Act is applicable only to industrial workers in this respect.

Change in Attitudes

A healthy contribution of green revolution is the change in the attitudes of farmers in areas where the new agricultural strategy was practised. Increase in productivity in these areas has enhanced the status of agriculture from a low level subsistence activity to a money-making activity. The Indian farmer has shown his willingness to accept technical change in the pursuit of profit thus nullifying the age-long criticism against him that he is backward, traditional and unresponsive to the price and productivity incentives. To quote Wolf Ladejinsky, "Where the ingredients for the new technology are available, no farmer denies their effectiveness. The desire for better farming methods and a better standard of living is growing not only among the relatively small number of the affluent using the new technology, but also among countless farmers still from the outside looking in." This factor, as noted by him, cannot be underestimated as an opening to future progress. The objective evidence of these 'qualitative' changes is provided by the short and long-term investment decisions of the farmers, i.e., by changes in the consumption of current inputs like fertilisers and efforts aimed at land development through construction of tubewells and installation of irrigation pumpsets. From a mere 1.89 million hectares in 1966-67 area under HYVP increased to 78.4 million hectares in 1998-99. The consumption of fertilisers which was only 2.9 lakh tonnes in 1960-61 shot up to 281.22 lakh tonnes in 2010-11. During the five year period, 1999-2000 to 2003-04, about 1.1 million tractors and 68,000 power tillers were sold in the country. The contribution of Draught Animal Power to total power availability in Indian agriculture has been declining over the years while the share of mechanical and electrical power has been increasing. For example, the share of mechanical and electrical power in power availability for carrying out agricultural operations was 40 per cent in 1971-72 and it rose to 84 per cent in 2003-04. Consumption of electricity for agricultural purposes rose from 17,817 GWh (Giga Watthour) in 1982-83 to 1,07,769 GWh in 2008-09.

5.3.3 SUMMARY

The last unit spells out the concept of green revolution and its implication on Indian agriculture. It explains how has the use of adoption of new technology called 'high yielding variety seed-fertilizer-pesticide and irrigation water' technology boosted the production and productivity of Indian agriculture. Lastly, the unit critically examines the impact of green revolution on India agriculture.

5.3.4 SELF ASSESSMENT QUESTIONS

1. Spell out the concept of 'green revolution' and explain its ingredients components-factors causing it.
2. Briefly explain the implication of new agricultural strategy in India.
3. Critically examine the impact of green revolution on Indian agriculture.
4. Discuss the contribution of new agricultural strategy or green revolution in changing the attitude of farmers towards its adoption.

LET US SUM UP

This last unit of the book gives the picture of an acute foodgrain shortage in India during 1960s. Even the possibility of importing foodgrains had exhausted due to the uncertainty in world supply of foodgrains especially in the face of increasing demand from food deficit regions of the world. On the other end possibility of increasing production by expansion of area had exhausted. In order to overcome the problem, the government put emphasis on intensive cultivation through introduction of new technology. Exactly at that time a scientific breakthrough was made in the field of agriculture wherein an improved varieties of seeds of wheat and rice food cereals which were more responsive to fertilizer and irrigation, became available. This led to impressive growth of production of wheat and rice output by a spectacular increase in the productivities of these crops. Expansion of area under high yield varieties of seeds was matched by the increasing application of technical inputs. The adequacy of the fertilizer supply was a major pre-condition for the success of this technology. Another crucial input was the assured irrigation. The availability of water all the year round through the irrigation networks initially and tubewell irrigation later on not only helped in increasing the productivities of the HYV crops but also resulted in increasing cropping intensity to increase the per unit productivity of land. Although mechanization especially tractors, power-tillers and combine harvesters were instrumental in replacing both bullock power and human labour, nevertheless, they had an advantage in saving time by enabling certain agaricultural operations to be completed within given time, thus leading to higher intensity of cropping on the one hand and increasing productivity by minimizing losses on the other. All these led to production of plenty of foodgrains production called "Green Revolution" in India.

Key Terms

- **High-Yielding Varieties (HYVs)**: Crop varieties developed through selective breeding or genetic modification to produce significantly higher yields compared to traditional varieties.
- **Intensive Use of Inputs**: The increased application of fertilizers, pesticides, and irrigation to maximize crop yields.
- **Mechanization**: The adoption of machinery and technology to automate and streamline agricultural processes, reducing labor requirements and increasing efficiency.
- **Infrastructure Development**: Investments in physical infrastructure such as irrigation systems, roads, and storage facilities to support agricultural production and distribution.
- **Knowledge Transfer**: Programs and initiatives aimed at disseminating knowledge and best practices in modern agriculture to farmers, often through extension services and training programs.

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Key Terms

- **High-Yielding Varieties (HYVs)**: Crop varieties developed through selective breeding or genetic modification to produce significantly higher yields compared to traditional varieties.
- **Intensive Use of Inputs**: The increased application of fertilizers, pesticides, and irrigation to maximize crop yields.
- **Mechanization**: The adoption of machinery and technology to automate and streamline agricultural processes, reducing labor requirements and increasing efficiency.
- **Infrastructure Development**: Investments in physical infrastructure such as irrigation systems, roads, and storage facilities to support agricultural production and distribution.
- **Knowledge Transfer**: Programs and initiatives aimed at disseminating knowledge and best practices in modern agriculture to farmers, often through extension services and training programs.