- trace the emerging issues that the Indian economy faces today
- discuss the trend of growth and composition of national income in India.

1.2 INTRODUCTION

The primary objective of this unit is to make you familiar with the basic features of the Indian economy, in the aftermath of Independence as well as in the present context. It is equally important to know something about the country's economic past to understand its present state and future prospects. So, let us first look at the state of India's economy prior to the country's independence.

The structure of the Indian economy today is not just of current making; it has its roots steeped in history, particularly in the period when India was under the British rule which lasted for almost two centuries before India finally won its independence on 15 August 1947. The sole purpose of the British colonial rule in India was to reduce the country to turn it into a feeder economy for Great Britain's own rapidly expanding modern industrial base. An understanding of the exploitative nature of this relationship is essential for any assessment of the kind and level of development which the Indian economy has been able to attain over the last six decades.

1.3 INDIAN ECONOMY IN THE PRE-INDEPENDENCE PERIOD

India had an independent economy before the advent of the British rule. Though agriculture was the main source of livelihood for most people, yet, the country's economy was characterised by various kinds of manufacturing activities. India was particularly well known for her handicraft industries in the fields of cotton and silk textiles, metal and precious stone works etc. These products enjoyed a worldwide reputation of the fine quality of material used and the high standards of craftsmanship. The economic policies pursued by the colonial government in India were more concerned with the protection and promotion of the economic interests of their home

UG EC S4-03
(DSC/DSE)

FOUR YEAR BACHELOR'S DEGREE COURSE
(CBCS in Accordance with NEP 2020)

SEMESTER- IV

INDIAN ECONOMY
ECONOMICS

Surya Kumar Bhuyan School of Social Sciences
KRISHNA KANTA HANDIQUI STATE OPEN UNIVERSITY

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UNIT 1: INDIAN ECONOMY: ITS BASIC CHARACTERISTICS, DEVELOPMENT AND GROWTH

UNIT STRUCTURE

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1.5 Trend in National Income: Growth and Its Composition
  1.5.1 Trend of Growth in National Income
  1.5.2 Composition of National Income
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1.7 Further Reading
1.8 Answers to Check Your Progress
1.9 Model Questions

1.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- be familiar with the state of the Indian economy in 1947, the year of India's Independence
- describe the factors that led to the underdevelopment and stagnation of the Indian economy
- become familiar with the different sectors of the Indian economy
- discuss the characteristics of India as a developing economy

COURSE INTRODUCTION

This is first course of the sixth semester of BA programme in Economics of this University. This course shall be helpful for gaining an insight into the problems, issues and policy framework of the Indian Economy. After going through this Course, you will be able to discuss the different socio-economic problems of our society in the changing context of the economy.

BLOCK INTRODUCTION

The first block of the Course on Indian Economy consists of seven units. The first unit discusses about the nature of the Indian economy and India's national income, its trend, size and composition. The second unit discusses the national income of India. After going through this unit, you will be able to acquire a fair knowledge about. The second unit deliberates on population and human resources in the context of the Indian economy. The third unit of the course deliberates on infrastructure. Here, the status of different infrastructural areas, viz., energy and power, transport, communication and urban infrastructure have been discussed. The recent initiative like Smart Cities has also been discussed. The next three units of the block, i.e., units 4 to 6 discussed some of the issues of the agricultural sector of the Indian economy. These three units will be helpful in getting insights into the role of agriculture in Indian economy, its nature and the trend of its production and productivity. Apart from this, you will also be able to find out the factors that influence the productivity of Indian agriculture. The adoption of new agriculture, most popularly known as the 'Green Revolution' has also been discussed. Again, the context of land reform measures in India, its overall assessment has also been outlined. In addition to these, important issues relating to agricultural finance and agricultural marketing has also been discussed. The seventh unit of the block discusses food security. In this unit, the concept of food security, salient features of Food Security Act 2013 the public distribution systems and its impact on poverty as well as the problems of the PDS have been discussed.

While going through a unit, you will notice some along-side boxes, which have been included to help you know some of the difficult, unseen terms. Some "ACTIVITY' (s) have been included to help you apply your own thoughts. Again, we have included some relevant concepts in "LET US KNOW" along with the text. And, at the end of each section, you will get "CHECK YOUR PROGRESS" questions. These have been designed to self-check your progress of study. It will be better if you solve the problems put in these boxes immediately after you go through the sections of the units and then match your answers with "ANSWERS TO CHECK YOUR PROGRESS" given at the end of each unit.

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World trade organisation (WTO) and Its Functions; Agreements Implemented under the WTO; Implications for India



CHECK YOUR PROGRESS

Q 4: State whether True (T) or False (F)

(a) The population of British India was first collected through a census in 1881. (T/F)

(b) By the time India won its independence, the agricultural sector was transformed into a modern agricultural sector. (T/F)

Q 5: Mention the status of a few social indicators during the British period. (Answer in about 60 words)

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Q 6: The introduction of the railways in our country brought enormous prosperity to the Indian economy. Do you agree with this statement? Justify your view. (Answer in about 60 words).

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1.4 INDIAN ECONOMY : CHARACTERISTICS & EMERGING ISSUES

in this section, we shall discuss two major aspects of the Indian economy, viz., its basic features as a developing economy, and the emerging issues.

1.4.1 Characteristics of India as a Developing Economy

The Indian economy has all the characteristics of a developing economy. The main characteristics of its economy are as follows:

- **Low level of income :** The per capita income in India is one of the lowest in the world. Low level of income means low standard

economy than with the development of the Indian economy. Such policies brought about a fundamental change in the structure of the Indian economy — transforming the country into a net supplier of raw materials to the British economy and consumer of finished industrial products from Britain.

Obviously, the colonial government never made any sincere attempt to estimate India's national and per capita income. Some individual attempts which were made to measure such incomes yielded conflicting and inconsistent results. Among the notable estimators — Dadabhai Naoroji, William Digby, Findlay Shirras, V.K.R.V. Rao and R.C. Desai — it was Rao whose estimates of the national and per capita incomes during the colonial period were considered very significant. However, most studies did find that the growth of the aggregate country's real output during the first half of the twentieth century was less than two per cent coupled with a meagre half per cent growth in per capita output per year.

1.3.1 Agricultural Sector

India's economy under the British colonial rule remained fundamentally agrarian — about 85 per cent of the country's population lived mostly in villages and derived livelihood directly or indirectly from agriculture. However, despite being the occupation of such a large population, the agricultural sector continued to experience stagnation and, not infrequently, unusual deterioration. Agricultural productivity became incrementally low, though in absolute terms, the sector experienced some growth due to the expansion of the aggregate area under cultivation. This stagnation in the agricultural sector was caused mainly because of the various systems of land settlement that were introduced by the colonial government. Under the zamindari system which was implemented in the then Bengal Presidency comprising parts of India's present-day eastern states, the profit accruing out of the agriculture sector went to the zamindars instead of the cultivators. However, a considerable number of zamindars, and not just the colonial

government, did nothing to improve the condition of agriculture. The main interest of the zamindars was only to collect rent regardless of the economic condition of the cultivators; this caused immense misery and social tension among the latter. To a very great extent, the terms of the revenue settlement were also responsible for the zamindars adopting such an attitude; dates for depositing specified sums of revenue were fixed, failing which the zamindars were to lose their rights. Besides this, low levels of technology, lack of irrigation facilities and negligible use of fertilisers, all added up to aggravate the plight of the farmers and contributed to the dismal level of agricultural productivity. There was, of course, some evidence of a relatively higher yield of cash crops in certain areas of the country due to commercialization of agriculture. But this could hardly help farmers in improving their economic condition as, instead of producing food crops, now they were producing cash crops which were to be ultimately used by British industries back home. India's agricultural production received a further setback due to the country's partition at the time of independence. A sizeable portion of the undivided country's highly irrigated and fertile land went to Pakistan; this had an adverse impact upon India's output from the agriculture sector. Particularly affected was India's jute industry since almost the whole of the jute producing area became part of East Pakistan (now Bangladesh). India's jute goods industry (in which the country had enjoyed a world monopoly so far), thus, suffered heavily for lack of raw material.

1.3.2 Industrial Sector

As in the case of agriculture, so also in manufacturing, India could not develop a sound industrial base under the colonial rule. Even as the country's world famous handicraft industries declined, no corresponding modern industrial base was allowed to come. The primary motive of the colonial government behind this policy of

contributions. The railways influenced the structure of the Indian economy in two important ways. On one hand, it enabled people to undertake long distance travel and thereby break geographical and cultural barriers, while, on the other, it fostered commercialisation of Indian agriculture which adversely affected the comparative self-sufficiency of the village economies in India. The volume of India's export trade undoubtedly expanded but its benefits rarely accrued to the Indian people. The social benefits, which the Indian people gained owing to the introduction of the railways, were thus outweighed by the country's huge economic loss. Along with the development of roads and railways, the colonial rulers also took measures for developing the inland trade and sea lanes. However, these measures were far from satisfactory. The inland waterways, at times, also proved uneconomical as in the case of the Coast Canal on the Orissa coast. Though the canal was built at a huge cost to the government exchequer, yet, it failed to compete with the railways, which soon traversed the region running parallel to the canal, and ultimately the canal had to be abandoned. The introduction of the expensive system of electric telegraph in India, served the purpose of maintaining law and order. The postal services, on the other hand, despite serving a useful public purpose, remained all through inadequate.

By the time India won its independence, the agricultural sector was already saddled with surplus labour and extremely low productivity. The industrial sector was crying for modernisation, diversification, capacity building and increased public investment. Foreign trade was oriented to feed the Industrial Revolution in Britain. Infrastructure facilities, including the famed railway network, needed upgradation, expansion and public orientation. Prevalence of rampant poverty and unemployment required welfare orientation of public economic policy. In a nutshell, the social and economic challenges before the country were enormous.

but there is no doubt that extensive poverty prevailed in India during the colonial period which contributed to the worsening profile of India's population of the time.

Occupational Structure : During the colonial period, the occupational structure of India, i.e., distribution of working persons across different industries and sectors, showed little sign of change. The agricultural sector accounted for the largest share of workforce, which usually remained at a high of 70-75 per cent while the manufacturing and the services sectors accounted for only 10 and 15-20 per cent respectively. Another striking aspect was the growing regional variation. Parts of the then Madras Presidency (comprising areas of the present-day states of Tamil Nadu, Andhra Pradesh, Kerala and Karnataka), Maharashtra and West Bengal witnessed a decline in the dependence of the workforce on the agricultural sector with a commensurate increase in the manufacturing and the services sectors. However, there was an increase in the share of workforce in agriculture during the same time in states such as Orissa, Rajasthan and Punjab.

1.3.5 Infrastructure

Roads constructed in India prior to the advent of the British rule were not fit for modern transport. The colonial administration also could not accomplish much on this front due to a paucity of funds. The roads that were built primarily served the purposes of mobilising the army within India and drawing out raw materials from the countryside to the nearest railway station or the port to send these to far away England or other lucrative foreign destinations. There always remained an acute shortage of all weather roads to reach out to the rural areas during the rainy season. Naturally, therefore, people living mostly in these areas suffered grievously during natural calamities and famines. The British introduced the railways in India in 1850 and it is considered as one of their most important

systematically deindustrialising India was two-fold. The intention was, first, to reduce India to the status of a mere exporter of important raw materials for the upcoming modern industries in Britain and, second, to turn India into a sprawling market for the finished products of those industries so that their continued expansion could be ensured to the maximum advantage of their home country — Britain. In the unfolding economic scenario, the decline of the indigenous handicraft industries created not only massive unemployment in India but also a new demand in the Indian consumer market, which was now deprived of the supply of locally made goods. This demand was profitably met by the increasing imports of cheap manufactured goods from Britain. During the second half of the nineteenth century, modern industry began to take root in India but its progress remained very slow. Initially, this development was confined to the setting up of cotton and jute textile mills. The cotton textile mills, mainly dominated by Indians, were located in the western parts of the country, namely, Maharashtra and Gujarat, while the jute mills dominated by the foreigners were mainly concentrated in Bengal. Subsequently, the iron and steel industries began coming up in the beginning of the twentieth century. The Tata Iron and Steel Company (TISCO) was incorporated in 1907. A few other industries in the fields of sugar, cement, paper etc. came up after the Second World War. However, there was hardly any capital goods industry to help promote further industrialisation in India. The establishment of a few manufacturing units here and there was no substitute to the near wholesale displacement of the country's traditional handicraft industries. Furthermore, the growth rate of the new industrial sector and its contribution to the Gross Domestic Product (GDP) remained very small. Another significant drawback of the new industrial sector was the very limited area of operation of the public sector. This sector remained confined only to the railways, power generation, communications, ports and some other departmental undertakings.

1.3.3 Foreign Trade

India has been an important trading nation since ancient times. But the restrictive policies of commodity production, trade and tariff pursued by the colonial government adversely affected the structure, composition and volume of India's foreign trade. Consequently, India became an exporter of primary products such as raw silk, cotton, wool, sugar, indigo, jute etc. and an importer of finished consumer goods like cotton, silk and woollen clothes and capital goods like light machinery produced in the factories of Britain. For all practical purposes, Britain maintained a monopoly control over India's exports and imports. As a result, more than half of India's foreign trade was restricted to Britain while the rest was allowed with a few other countries like China, Ceylon (Sri Lanka) and Persia (Iran). The opening of the Suez Canal further intensified British control over India's foreign trade. The most important characteristic of India's foreign trade throughout the colonial period was the generation of a large export surplus. But this surplus came at a huge cost to the country's economy. Several essential commodities—food grains, clothes, kerosene etc. — became conspicuous by their acute scarcity in the domestic market. Furthermore, this export surplus did not result in any flow of gold or silver into India. Rather, this was used to make payments for the expenses incurred by an office set up by the colonial government in Britain, expenses on war, again fought by the British government, and the import of invisible items, all of which led to the drain of Indian wealth.



CHECK YOUR PROGRESS

Q 1: State whether True (T) or False (F)

(a) India's economy under the British colonial rule remained fundamentally agrarian. (T/F)

(b) V.K.R.V. Rao's estimation of the national and per capita incomes during the colonial period were considered very significant. (T/F)

Q 2: When was TISCO formed? What is the full form of TISCO.

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Q 3: Why did the colonial government try to de-industrialise the Indian economy? (Answer in about 60 words)

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1.3.4 Demographic Condition & Occupational Structure

Demographic Condition : Various details about the population of British India were first collected through a census in 1881. Though suffering from certain limitations, it revealed the unevenness in India's population growth. Subsequently, every ten years such census operations were carried out. Before 1921, India was in the first stage of demographic transition. The second stage of transition began after 1921. However, neither the total population of India nor the rate of population growth at this stage was very high. The various social development indicators were also not quite encouraging. The overall literacy level was less than 16 per cent. Out of this, the female literacy level was at a negligible low of about seven per cent. Public health facilities were either unavailable to large chunks of population or, when available, were highly inadequate. Consequently, water and air-borne diseases were rampant and took a huge toll on life. No wonder, the overall mortality rate was very high and in that, particularly, the infant mortality rate was quite alarming—about 218 per thousand in contrast to the present infant mortality rate of 30.15 per thousand. Life expectancy was also very low—32 years in contrast to the present 67 years and 9 months. In the absence of reliable data, it is difficult to specify the extent of poverty at that time

51 to about 54% in 2005-06. It is worth mentioning that the tertiary sector comprises three components viz., transport, communication and trade, and finance and real estate which includes banking and insurance as well as community and personal services like education, health & family welfare.

Table 1.2 : Share of Gross Domestic Product by Industry of Origin (at 1993-94 series) in percentage

Sector/Year	1950-51	1980-81	2005-06
I. Agriculture etc.	57.2	39.7	19.7
1. Agriculture	50.2	35.8	18.0
2. Forestry	6.1	3.0	0.7
3. Fishing	0.9	1.0	0.9
II. Mining, Manufacturing etc.	14.8	23.7	26.2
1. Mining and quarrying	1.5	2.1	2.1
2. Manufacturing	8.9	13.8	15.1
a. Registered	4.4	8.1	10.3
b. Unregistered	4.5	5.8	4.8
3. Electricity, gas & water supply	0.3	1.7	2.2
4. Construction	4.1	6.1	6.8
III. Transport, Communication & Trade etc.	11.9	18.4	26.1
IV. Finance & Real Estate	6.7	6.5	13.8
V. Community and Personal Services	9.4	11.7	14.2
A. Commodity Sector (I+II)	72.0	63.4	45.9
B. Service Sector (III+IV+V)	28.0	36.6	54.1
Total	100.0	100.0	100.0

The structural change in the composition of national income by industrial origin is the consequence of the process of economic growth initiated during different plans. As industrialization spreads, it brings about an improvement in the share of industry and services.

of living and low levels of consumption. Whatever progress has been made in production since independence is not reflected in the per capita income of the country. This is because of the high growth in population. There are wide disparities in the level of incomes and about one third of the Indian population live below the poverty line. Due to low standards of living, the efficiency of the labour is low.

- **Pre-dominance of agriculture :** About two-thirds of the Indian workforce is engaged in agriculture and the contribution of the agricultural sector to the GDP is around 27% to 30%. As against this, in most developed countries, only 2% to 4% of the workforce is engaged in agriculture and the contribution of this sector to GDP happens to be only about 2% to 9%. In India, the agricultural sector is still dependent on the monsoons and technology that is used is very backward.
- **Capital deficiency :** Low level of income results in low level of saving and low level of capital formation. Due to inadequate availability of capital, other resources such as labour and natural resources remain unutilised and unexploited.
- **Technological backwardness :** In most sectors, technology used in production is still very backward. Investment in research and development is very low and this results in import of technology.
- **Inadequate infrastructure :** Infrastructure facilities such as transport, communication, power are required both for industrial production as well as agricultural production, and also in the service sector. All these facilities are inadequate.
- **High rate of growth of population :** India's population of approximately 1.17 billion people (estimate for July, 2009) consists of more than one-sixth of the world's population. Demographers expect India's population to surpass the population of China, currently the most populous country in the world, by 2030. At that time, India is expected to have a population of more than

1.53 billion while China's population is forecast to be at its peak of 1.46 billion (and will begin to drop in subsequent years). A high growth rate of the population means additional pressure on the available resources and low per capita income.

- **High rate of illiteracy :** High rate of illiteracy : As per 2011 Census, the overall literacy rate of India is 74%. The male literacy rate is 82% and female literacy rate is 65.5%.
- **High infant mortality rate :** High infant mortality rate : India has the highest infant mortality rate in the world, a nationwide survey reveals. India still ranks much below in United Nations Human Development report. In 2019, India's rank was 129 among 189 countries. This shows inadequate nutrition and poor sanitation conditions.

1.4.2 Emerging Issues facing the Indian Economy

As India prepares herself for becoming an economic superpower and a developed nation by the year 2020, it must expedite socio-economic reforms and take steps for overcoming institutional and infrastructure bottlenecks in the system. Steps should be taken for improving the pace of development. The emerging issues that the Indian economy faces are:

- **Inflation :** Fuelled by rising wages, property prices and food prices, inflation in India is an increasing problem. Between the fiscal year 2004-05 and 2007-2008, India had experienced an average growth rate of more than 9%, but the global economic crisis caused such adverse external shocks in the economy that a few sectors experienced a slump. Inflation in India in 2009 stood at 11.49%. A decade later, which experienced certain ups and downs in the growth rate of the economy, the rate of inflation has come down to around 3.41 percent in 2018-19.
- **Poor educational standards :** Literacy is a key for socio-economic progress and the Indian literacy rate grew to 74% in

When the more recent period (2002 to 2012) was compared with the last decade of the twentieth century (1992 through 2002), it reveals some notable features. Against the recorded average rate of growth of just over 6 percent in the last decade of twentieth century, it was an encouraging 7.8 % in the first decade of planning of the twenty first century.

1.5.2 Composition of National Income

Composition of national income shows break-down of economic activity into different sectors and their contribution. As an economy becomes more developed, the contribution of industry to the GDP increases with agriculture registering for a relatively lower share. The Indian economy was not an exception to it and experienced the same as a result of the initiatives taken by the government for development. Following broad trends in the changing composition of the domestic production are shown in Table 1.2.

From the table, it can be seen that :

- The share of the primary sector which includes agriculture, forestry and fishery has gone down from 57.7 % in GDP in 1950-51 to 18% in 2005- 06.
- The share of fishing in GDP had remained stable at about 1% throughout the last five decades.
- It is really shocking that the share of forestry in GDP has shown a continuous decline from 6.1% in 1950-51 to barely 0.7% in 2005-06.
- As a whole, the share of secondary sector has increased from 1.48% of GDP in 1950-51 to 26.2% in 2005-06. In this steady growth, the manufacturing sector including both registered & unregistered sectors have played a major role.
- Again, the share of tertiary sector which includes trade, transport, storage, communications, banking, insurance, real estate & community and personal services improved from 28.0% in 1950-

income covers the last 65 years of planning. The structural transformation that has occurred in the Indian economy over the decades is a consequence of the development process witnessed since the beginning of planning in 1951. These changes may be reflected in the growth rate and in the changing sectoral composition of the GDP. Some of the significant features of the long term trends in real GDP have been shown in Table 1.1.

Table 1.1 : Average Annual Growth Rate in GDP

	Period Year	Growth rate (percent)
First Plan	1951-56	3.6
Second Plan	1956-61	4.3
Third Plan	1961-66	2.8
Annual Plans	1966-69	3.8
Fourth Plan	1969-74	3.3
Fifth Plan	1974-79	4.8
Annual Plans	1979-80	-6.0
Sixth Plan	1980-85	5.7
Seventh Plan	1985-90	6.0
Annual Plans	1990-92	3.0
Eight Plan	1992-97	6.8
Ninth Plan	1997-02	5.4
Tenth Plan	2002-07	7.6
Eleventh Plan	2007-12	8.0
Twelfth Plan	2012-17	8.0*

* Estimates only.

Source: MOSPI Website.

In the eighties, GDP has recorded a growth rate of 5.5% with the average rate of growth at 5.8% which was slightly higher than the targeted rate of growth. But during this period the annual growth rate was very unstable. This high rate couldn't sustain for the crisis revealed in 1991-92, when the annual GDP growth rate declined to a low of 0.8 percent.

2011 from 12% at the end of British rule in 1947. Although this was a greater than six fold improvement, the level is well below the world average literacy rate of 86% There is a wide gender disparity in the literacy rate in India: the adult literacy rate (15+) for male is 78.8 against 59.3 of females in 2011. The low female literacy rate has had a dramatically negative impact on family planning and population stabilization efforts in India. It is worse in rural areas and amongst women. Over 50% of rural Indian women are illiterate.

- **Poor Infrastructure :** Many areas of India are serviced with poor transport links and under developed communication channels. Lack of energy supplies have also led to power shortages in certain areas. Many Indians lack basic amenities like access to running water. These problems are likely to exacerbate with both a growing population and growing economy.
- **Balance of Payments deterioration :** Although India has built up large amounts of foreign currency reserves the current account deficit has deteriorated in recent months. This deterioration is a result of the overheating of the economy. Aggregate Supply cannot meet Aggregate demand so consumers are consuming imports.
- **Inequality has risen rather than decreased :** It is hoped that economic growth would help drag the Indian poor above the poverty line. However so far economic growth has been highly uneven benefiting the skilled and wealthy disproportionately. Many of India's rural poor are yet to receive any tangible benefit from the India's economic growth. Forbes report suggest that evern after much efforts, nearly 31 million homes do not have electricity. Significant portion of the the population still live on below the poverty line. Furthermore with the spread of television, internet and mobile, Indian villages the poor are increasingly aware of the disparity between rich and poor.
- **Large Budget Deficit :** India has one of the largest budget

deficits in the developing world. Thus, it allows little scope for increasing investment in public services like health and education. However, in the recent times, the fiscal deficit has come down to 3.39% in 2018-19.

- **Environmental costs of growth :** The high economic growth has led to a burgeoning middle class who have benefited in terms of being able to buy more cars and consume more. However this has led to increased problems of pollution and congestion. This issue is magnified by the excessive crowding faced in many Indian cities. Some economists are of the opinion that India needs to try and control its growing population level to provide a more stable economic and social environment.
- **Barriers to entry :** The Indian economy is still highly regulated with costs and restrictions faced by businessmen wishing to enter certain markets. This continues to limit entrepreneurship and their removal is important to continue the flow of inward investment. Procedures should be simplified and entry barriers for business activities should be relaxed.
- **Unemployment :** Unemployment has remained a problem despite the fast growth of the economy. There is an increase in the number of people entering the Indian labour market, particularly young women. It may be difficult to provide sufficient jobs unless investment continues in manufacturing and the service sector.
- **Skills shortage :** Although the Indian economy has relatively good levels of education, there still exist severe shortages of skilled manpower in certain areas such as IT. There is also a growing gap between the rich and the poor in different areas of the country. There is need for a concerted effort to increase both academic and vocational skills to a broader section of the population
- **Fiscal reforms :** One of the challenges in fiscal reform will be reconciling the need for fiscal consolidation with appropriate tax

reform. Indirect taxes not only affect efficiency of resource allocation but also the investment climate.

- **Foreign Direct Investment (FDI) :** There is a need to attract higher foreign direct investment to the country. Such investment triggers technology spillovers, assists human capital formation, contributes to international trade integration and particularly exports, helps create a more competitive business environment, enhances enterprise development, increases total factor productivity and, more generally, improves the efficiency of resource use.



CHECK YOUR PROGRESS

Q 7: State whether True (T) or False (F)

(a) India has one of the largest budget deficits in the developing world. (T/F)

(b) India's population is approximately one-sixth of the world's population. (T/F)

Q 8: 'Inflation is one of the important emerging issues in India'. Do you agree with the statement? Justify your point. (Answer in about 60 words)

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1.5 TREND IN NATIONAL INCOME : GROWTH AND ITS COMPOSITION

1.5.1 Trend of Growth in National Income

To have a more comprehensive idea, the study of the trend in national

UNIT 2 : POPULATION AND HUMAN RESOURCES

UNIT STRUCTURE

2.1 Learning Objectives

2.2 Introduction

2.3 The Theory of Demographic Transition

2.4 Size and Growth of Population in India

2.5 Characteristics of the Indian Population

2.6 Indicators of Human Development

2.7 Let Us Sum Up

2.8 Further Reading

2.9 Answers to Check Your Progress

2.10 Model Questions

2.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- describe the concept of human resource,
- derive an idea about the different stages of demographic transition,
- discuss the growth and various characteristics of the Indian population, and
- explain the concept of human development and its various indicators.

2.2 INTRODUCTION

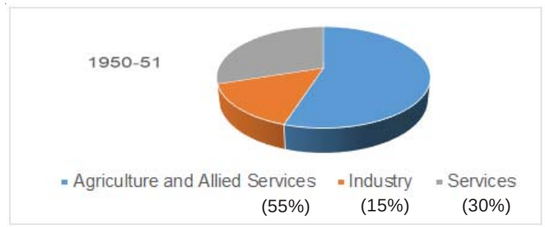
We all know that man is the most intelligent creature on the earth. By using his intelligence, man can innovate new skills and produce many things. Thus, on account of his contribution to the production process, human may be considered a valuable resource just like any other factor of production.

Human resource may be considered as capital asset which yields a stream of economic benefits over their working life. An improvement in mental and physical capability enhances the quality of human capital. As the human being contributes to growth and development by providing labour as well as innovative and entrepreneurial skill, it is called human resource.

Indian economy is passing through this process of transition from an agrarian economy to an industrialized one. Since the growth process involved a rapid expansion of manufacturing in the organized sector, the share of the manufacturing sector was bound to increase. However, agriculture did not indicate a fast rate of growth.

The share of GDP by industry of origin have also been shown in Figures 1.1 and 1.2 respectively.

Figure 1.1: Share of GDP by Industry of Origin (1999 - 2000 Series)



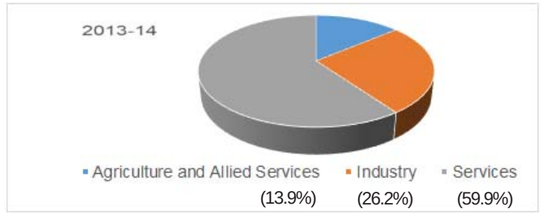
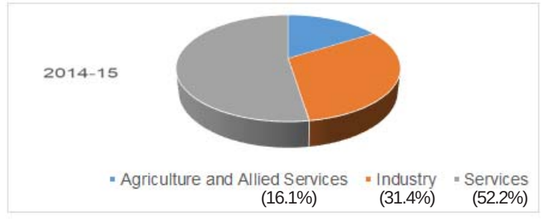


Figure 1.2: Share of GDP by Industry of Origin (2011-12 Series)



In Figure 1.1, the shares of GDP by industry of origin has been shown in 1999-2000 series. In Figure 1.2, the share of GDP by industry of origin has been shown for the year 2014-15 based on recent data series 2011-12. Thus, it can be seen that in 2014-15, the share of agriculture in India's GDP has come down of 16.1 percent while shares of industry and services have gone up to 31.4 and 52.2 percent respectively.

The phenomenal expansion of services world-wide has led to 'services' sectors being regarded as an engine of the growth and even as a necessary concomitant of economic growth. Development economists suggest that development is a three stage process. The dominance of the services sector in the growth process is usually associated with the third stage of growth. The development of service sector in India which is 54.1% of GDP in 2005-06 in the growth process is associated with the third stage of growth. Actually there is a sudden jump of the Indian economy to pass on to the stage of a post industrialized 'service sector' economy without completing the phase of industrialization. But this gap has to be removed by strengthening the manufacturing sector. This is possible with the progress of industrialization. At the same time, measures should be taken for accelerating the growth of the agricultural sector. This happens because of the inevitable link between agricultural development and industrial growth. It is only then the process of transition of the Indian economy from a developing to developed economy will be accomplished.

Trends of the share of public sector to GDP: The share of Public sector in GDP was 7.6% in 1950-51 which rose to 14.9 % in 1970-71 to 23.0% in 2005-06. This has been shown with the help of Table 1.3.

The gradual increase in the share of the public sector has been due to the expansion of the economy of the state-enlarging administrative services as well as the increasing productive activities in public enterprises. But after economic reforms were initiated in

communications, banking, insurance, real estate & community and personal services improved from 28.0% in 1950-51 to about 54% in 2005-06.

1.8 MODEL QUESTIONS

Short Questions (Answer each question in about 150 words)

Q 1: Write a short note on the agricultural sector of India in the pre-independence period.

Q 2: Briefly discuss the state of the industrial sector of India in the pre-independence Period.

Q 3: What was the state of foreign trade in India during the pre-independence period? Explain briefly.

Q 4: What were the demographic conditions and the pattern of occupations structure of India during the pre-independence period? Put forward a brief account.

Q 5: Make a brief sketch of the state of infrastructure during the pre-independence period in India.

Q 6: Briefly discuss the structural change in the composition of national income by industrial origin.

Essay-type Questions (Answer each question in about 500 words)

Q 1: Write an essay stating the scenario of the Indian economy in the pre-independence period.

Q 2: Explain the emerging issues facing the Indian economy.

Q 3: Discuss the features of India as a developing Economy.

Q 4: Discuss the Trend of growth and composition of National Income in India.

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Iron and Steel Company.

Ans to Q No 3: The primary motive of the colonial government behind its policy to de-industrialise the India economy was two-fold. First, it sought to reduce India to the status of a mere exporter of important raw materials, such that the upcoming modern industries in Britain are benefited. Secondly, it wanted to turn India into a market for the finished products of those industries in Britain.

Ans to Q No 4: (a) True (b) False

Ans to Q No 5: The status of the social development indicators in India during the British period was not quite encouraging. Literacy rate was less than 16 per cent; of this, the female literacy rate was only about 7 per cent. Water and air-borne diseases were rampant and caused death to many. Infant mortality rate was quite alarming —about 218 per thousand. Life expectancy was also very low – only 32 years.

Ans to Q No 6: Introduction of the railways in India brought certain social benefits like easy long distance travel, but it caused huge economic loss to the country as well. First, railways fostered commercialisation of Indian agriculture. This adversely affected the comparative self-sufficiency of the village economies. Secondly, the volume of India's export rose significantly, but its benefits rarely accrued to the Indian people.

Ans to Q No 7: (a) True (b) True

Ans to Q No 8: Inflation is one of the emerging issues in India. With economic growth of 9.2% per annum, inflationary pressures are likely to increase, especially with supply side constraints such as infrastructure. Between the fiscal year 2004-05 and 2007-2008, India had experienced an average growth rate of more than 9%, but the global economic crisis caused such adverse external shocks in the economy that a few sectors experienced a slump. Inflation in India in 2009 stood at 11.49%.

Ans to Q No 9: On overall, the share of secondary sector has increased from 1.48% of GDP in 1950-51 to 31.4% in 2014-15. The manufacturing sector includes both registered & unregistered sectors. Similarly, the share of tertiary sector which includes trade, transport, storage,

1991, there was restriction on the role of the public sector. In 2011-12, the share of the public sector in GDP (at current prices) has decreased to 20.5 percent. (Source: www.data.gov.in).

Table 1.3: Share of Public Sector in Gross Domestic Product at Current Prices (In percentage)

Sector/Year	1970-71	1993-94	2005-06
Share of Public Sector in GDP	14.9	25.9	23.0
(i) Government administration	6.5	8.7	9.5
(ii) Departmental enterprises	4.1	3.7	2.7
(iii) Non-departmental enterprises	4.4	13.5	11.8

Source: Datt and Sundharam, *Indian Economy,* 2009

Share of organized and unorganized sector in NDP : Another feature of economic development is the shift in the composition of NDP from unorganized to organized sector. In India, as has been shown in Table 1.4, the share of organized sector has risen from 30 percent in 1980- 81 to 42 percent in 2004-05. Consequently, the share of the unorganized sector has declined from 70 percent to 58 percent during the same period.

Table 1.4: Percentage share in Net Domestic Product by Organised and Unorganised Sectors

Year/Sector	1980-81		2004-05		2007-08	
	Organised	Unorganised	Organised	Unorganised	Organised	Unorganised
1. Agriculture, Forestry & Fishing	4.8	95.2	5.6	94.4	8.8	91.2
2. Mining & manu-facturing etc.	56.8	43.2	62.9	37.1	70.2	29.8
3. Services	39.9	60.1	61.9	38.1	46.0	54.0
4. Total	30.0	70.0	42.0	58.0	42.9	57.1

Source: Datt and Sundharam, *Indian Economy,* 2009 & 2016

From the composition of different sectors it has been found that the share of the organised sector in mining, manufacturing etc.

has improved from 56.8% in 1980-81 to 62.9 % in 2004-05 and then to 70.2%. Besides, the overall growth in services in the organised sector has also shown progress during the last three decades from 40% in 1980-81 to 61.9% in 2004-05. But in 2007-08, it came down to 46.0%. On the other hand, the contribution of the unorganized sector on overall declined from 70.0% in 1980-81 to 57.1% in 2007-08.



CHECK YOUR PROGRESS

Q 9: Discuss the trend of the shares of the secondary and the tertiary sectors in GDP of the economy. (Answer in about 50 words)

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1.5 LET US SUM UP

- India had an independent economy before the advent of the British rule.
- V.K.R.V. Rao's estimates of the national and per capita incomes during the colonial period were considered very significant.
- The population of British India was first collected through a census in 1881.
- Various systems of land settlement were introduced by the colonial government.
- The traditional handicrafts industries were ruined under the British rule. India could not develop a sound industrial base under the colonial rule.
- There was always an acute shortage of all weather roads to reach out to the rural areas during the rainy season.
- There are wide disparities in the level of incomes and about one third of the Indian population live below the poverty line.

- Many areas of India are serviced with poor transport links and under developed communication channels.
- So far, economic growth in India has been highly uneven.
- There is an increase in the number of people entering the Indian labour market.
- The agricultural sector needs increased investment in irrigation and water supplies.
- One of the challenges in fiscal reform will be reconciling the need for fiscal consolidation with appropriate tax reform.
- Farmers and enterprises should have access to finance at competitive rates.
- The trend of national income growth is not so satisfactory. In certain periods it was comparatively high but it could not be sustained in the subsequent periods.
- There is also change in the structural composition of national income. The contribution of agriculture is rapidly decreasing and the share of industrial sector has been gradually increasing. Tremendous progress has been shown by the service sector.



1.6 FURTHER READING

1) Agrawal, A. N. (2019). *Indian Economy: Developmental Problems and Policies.* New Delhi: New Age International Publishers.

2) Datt, G and Mahajan, A. (2016). *Datt & Sundharam's Indian Economy.* New Delhi: S. Chand & Co.

3) Kapila, U. (2003). *Indian Economy since Independence.* New Delhi: Academic Foundation.

4) Misra, S.K. & Puri, V.K. (2018). *Indian Economy.* New Delhi: Himalya Publishing House.



1.7 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: (a) True (b) True

Ans to Q No 2: TISCO was formed in 1907. Full form of the term is Tata

be disparity in industrial development.

- **Rural Urban Ratio :** Before discussing rural urban ratio in India, it would be better if we have a glimpse of the concept of 'urbanisation'. In a very simple way urbanisation can be described as the process of conversion of rural areas into urban areas. But the parameters used for describing urbanisation vary among different countries. At present an urban area has thus been defined in India as follows:
  - ➢ All places with a municipality, corporation, cantonment board or notified town area committee
  - ➢ All other places which satisfy the following criteria:
    - o A minimum population of 5,000,
    - o At least 75 percent of the male working population engaged in non agricultural activities, and
    - o Density of population is at least 400 persons per sq. km.

The main features of urbanisation in India are as follows:

- ➢ The urban population has grown rapidly since 1961, with the decadal growth rate for 1961-71. at over 38 percent. During the period 1991-2001, the urban population has increased at the rate of 31 percent. As percentage of total population, the urban population was about 11 percent in 1901, about 18 percent in 1961, about 26 percent in 1991, 28 percent in 2001 and 31.2 in 2011.
- ➢ There has been a larger rise in the population of big towns. In comparison to class I and Class II towns, the percentage of urban population in smaller towns (class II) has in fact declined.
- ➢ There is variation in the level of urbanisation among different states.

But in spite of high rate of urbanisation, a majority of population lives in rural areas. The percentage of total population living in rural area is 68.8 in 2011, thus, leaving the urban figure to be 31.2. In Table 2.3, the percentage of rural and urban population in India over a period of hundred years has been shown.

Population can be considered a human resource as it contributes to the production process. But population size should be ***optimum***, it shouldn't be either too big or too small. A very small size of population may not be able to supply labour force & fails to generate effective demand. Similarly, a huge size of population is a burden on the economy. Therefore, it is important to maintain the optimum size of population for the balanced relationship between population size and economic development. But this relationship is a two way relationship. One important theory to explain how development affects population is the Theory of Demographic Transition which states that population growth can be studied in three stages. This unit begins with a brief outline of the Theory of Demographic Transition. Then it discusses the size, growth and characteristics of the Indian population. Then, finally we shall discuss the concept of human development and the indicators of human devlopment viz., the Human Development Index (HDI).

Optimum size of population means that population size, which the ecology of the country can sustain. But it is not the maximum number of population.

2.3 THE THEORY OF DEMOGRAPHIC TRANSITION

The theory of demographic transition postulates that birth rate and death rate differ in different stages of development. Population growth can be studied in three stages. Hence the sequence of birth and death rate are typically associated with economic development.

First stage: In the first stage of population growth both birth rate and death rate are very high. This keeps the actual growth rate of population low. According to this theory, death rate is high in the first stage because of several interrelated reasons. Developing countries are normally agrarian in nature with low productivity. People suffer from malnutrition, improper sanitation measures and absence of effective medical aid. In this stage, birth rate is also high because of some deep-rooted social belief, religious belief, early marriage, ignorance & absence of knowledge about family planning measures. Thus, the first stage is characterised by a high death and high birth rate. But such high birth rate shows the growth potentials only. The actual growth rate is very low since high birth rate is balanced by

high death rate and vice versa. As a consequence, the growth rate of population is slow.

Second stage: In the second stage of demographic transition, the death rate starts falling rapidly, but the birth rate remains almost stable. This leads to the widening of difference between the two, resulting in a very fast rise in the growth of population. Rise in income level enables the people to improve their diet. Economic development also brings about all-round improvement including the progress of health and other facilities. All these direct and indirect effects of development tend to reduce the death rate. Thus, in this stage the actual rate of population growth is high because of falling death rate even if birth rate remains stable or there is slight fall in it. In fact, in the second stage, the birth rate may actually increase because the number of persons in their reproductive age increases with a rise in life expectancy. Therefore, we can say that in the second stage, the growth rate of population becomes very rapid. India is in this phase of population explosion. But such rapid population growth has very serious consequences for the country's economic growth.

Third stage: The continuing development process further changes the basic characteristics of a developing country. Development brings about industrialization and urbanisation. As a result, people gradually develop a tendency to move from rural to urban areas. To cope up with the trend of urbanisation & rising cost of living, women have to go out for work. Under such circumstance, it becomes difficult to maintain large families and children become a problem instead of being a matter of pride.

Further, because of the expansion of education, people change their attitudes; they give up traditional beliefs & old values. Gradually, a stage comes to life when people realise the advantage of small family. As a result, birth rate falls gradually. On the other hand death rate is already very low which however can't be zero; because man can not escape death. In this way, the gap between birth rate and death rate narrows down and the growth of population becomes very slow. Thus, in the third stage, the birth rate and death rate become stable at low level, resulting in a very slow rise in population. The three stages explained above reveal the transformation of

- **Age Composition :** Age composition of population gives an idea about the proportionate number of persons in successive age categories in a given population. A population with persistently high fertility, for instance, has a large proportion of children and a small proportion of aged persons. But against this, a population with low fertility for a long time, has a smaller proportion of children and a larger proportion of aged persons.

  Information on the age composition is important for several reasons. The study of age composition is helpful in determining the proportion of labour force in the total population, unproductive consumer and dependent population. The census figure of 2001 shows that the proportion of child population in the age group 0-14 was 35.6 percent. The figure shows a high proportion of unproductive consumers in the population size. But the proportion of unproductive consumers was even higher in the previous four decades. The percentage of workforce which considers the age group 15-60 is 58.2. But the percentage of population in the age group of 60 and above is as low as 6 percent. This small percentage in this age group is owing to the low life expectancy of the Indian population.

- **The Density of Population :** The concept of density of population gives an idea about the average number of people living in a given km. area. It indicates the ratio of population to land. The density of population has been rising since 1921. The increase has been rapid from 1951 onward. The density of population was 77 persons living per square km. in 1901. This very small figure jumped to 267 per square km. of area in 1991 & further shot up to 324 per square km. in 2001 and then to 382 in 2011.

  But there is variation in density of population among different states & within states. There are differences in density in different regions also. As per Census 2011 figures, the density of population is the highest in the union territory of Delhi (11297). Among the states, the density of population is the highest in West Bengal (1102) and the lowest in Himachal Pradesh (123). There are many reasons for this; but the main reasons behind such variation in density of population are due to variation in climate, rainfall, irrigation facilities etc. Another reason may

As per 2011 census, there are 940 females for per thousand males. This is marginally higher compared to the figure of 2001 census which was 933. Table 2.2 shows the overall trend of sex ratio in the country since 1901.

Table 2.2: Sex Ratio in India

Year	Females per thousand males	Year	Females per thousand males
1901	972	1961	941
1911	964	1971	930
1921	955	1981	934
1931	950	1991	927
1941	945	2001	933
1951	946	2011	940

***Source**: Indian Economy, Datt and Sundharam, 2016*.

The above table shows that the sex ratio has been declining continuously barring the marginal improvement at a few points. Also note that among different states, Kerala alone shows a higher proportion of females, 1084 per thousand males in 2011. The states which had lower sex ratio than the national average are Assam, West Bengal, Bihar, Rajasthan, U.P, Punjab & Harayana. There is no universally acceptable explanation of declining sex ratio in India. This is because female foetuses are biologically stronger than the male foetuses and there is every possibility that women has longer life expectancy than male. However, there are few a reasons which have been put forward to explain this contradiction. *First*, a girl child is often ignored in the society. Some societies practise infanticide and foeticide. *Secondly,* because of ignorance, Indian women give birth to babies at a very short interval. This leads to death of many women. *Thirdly,* it is doubtful whether women were counted correctly. Because whenever any outsider comes, they remain under the veil to maintain social tradition. So, some women may refuse to appear before an enumerator with the resultant non recording of such women.

a primitive high birth & high death rate economy into a low birth & low death rate economy.



CHECK YOUR PROGRESS

Q 1: Why is the human being considered a capital asset? (Answer in about 30 words)

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Q 2: Outline the basic features of the three stages of demographic transition. (Answer in about 40 words)

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2.4 SIZE AND GROWTH OF POPULATION IN INDIA

After the above discussion of the Theory of Demographic Transition, we can definitely say that India is out of the first stage but it has not entered the third stage either. Therefore, it can be said that India is passing through the second stage. But there are some differences with the theoretical formulation of this stage and the ground realities in India. In the beginning of 20th century the size of population in India was 236 million and this has grown to the size of 1,027 million according to the census of 2001. A study of the growth rate of India's population falls into four phases:

1891-1921 : stagnant population

1921-1951 : Steady growth

1951-1981 : Rapid high growth

1981-2001 : high growth with definite sign of slowing down

Compound Annual Growth Rate (CAGR) : If we study the trend of India's population growth, these four phases will be seen clearly. From Table 2.1 it has been found that during 1981-1921, ***compound annual growth rate (CAGR)*** of population was very low. But from 1951, population grew at



Compound annual growth rate (CAGR) measures the annual rate of growth of return over time.

almost 2.1 percent & the high growth rate continued up to 1981. Population was still growing, but there was a slight fall in the compound growth rate. Since the last census in 2011, population has grown at the rate of merely 1.64 percent per annum.

Table 2.1: Compound annual growth rate of population in India

Time period	CAGR of population
1891-1921	0.19
1921-1951	1.22
1951-1981	2.15
1981-1991	2.11
1991-2001	1.93
2001-2011	1.64

Source: *Census of India, 2011*

Prior to 1921, India was at the first stage of demographic transition. The year '1921' is also called the year of great divide. This is so because before 1921, the rise of population was very slow and irregular, but after 1921 there was rapid and uninterrupted increase in it. Thus, from 1921 onwards, India has entered into the second stage of demographic transition in which the high growth potential of population was realised as a high actual growth of population. In view of the trend, it has been realised that very soon India will enter the third stage of demographic transition.

Causes of high birth rate in India : After knowing that India has been experiencing population explosion, naturally a question arises in our mind regarding the causes of such high birth rate. High birth rate is a special feature of the under developed and developing countries. Several factors are responsible for this high birth rate. Some of the important causes are mentioned below–

- **Poverty :** Poverty, associated with illiteracy and ignorance makes people believe that a large number of children can generate more income. Besides, there is an intensification of reproductive capacity in chronically starved people which develops through a complex process, involving psychological factors.

- **Religious belief and social attitude :** Especially among the Hindus, it is a common belief that without a male child, it is not possible to get deliverance from the cycle of birth and rebirth. Marriage is considered as an universal custom that has to be followed at an early age. In general, unmarried people don't enjoy respect in the society. All these factors contribute to increasing the reproductive rate.
- **Illiteracy & ignorance about family control measure :** India is yet to obtain a high level of literacy. Particularly women folks are not advanced in comparison to the male counterpart. Many of them don't know the merits of family control and the measures associated with it. Govt. of India has adopted several policy measures in this respect but the results are not so satisfactory.



CHECK YOUR PROGRESS

Q 3: Why is the year 1921 called 'the year of great divide'? (Answer in about 30 words)

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Q 4: There are three stages in the theory of demographic transition. In which stage is India at present?

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2.5 CHARACTERISTICS OF THE INDIAN POPULATION

Having acquired some knowledge about the size and trend of population growth, it would be useful to know some of the characteristics of Indian population. These have been discussed below:

- **Sex ratio:** Sex ratio shows the number of females per thousand males. It can be calculated by dividing the total number of females by total number of males and multiplying the resultant by 1000.

Policies. New Delhi: New Age International Publishers.

2) Datt, G and Mahajan, A. (2016). *Datt & Sundharam's Indian Economy.* New Delhi: S. Chand & Co.

3) Kapila, U. (2003). *Indian Economy since Independence.* New Delhi: Academic Foundation.

4) Misra, S.K. & Puri, V.K. (2018). *Indian Economy.* New Delhi: Himalya Publishing House.

2.9 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: We all know that human is the most intelligent creature on the earth. By using its intelligence, it can innovate new skills and produce many things. Thus, on account of its contribution to the production process, human may be considered as resource just like any other factor of production.

Ans to Q No 2: The basic features of the three stages of demographic transition are:

In the first stage: both the birth rate and death rate are very high. This keeps the actual growth rate of population low.

In the second stage: the death rate starts falling rapidly, but the birth rate remains almost stable. This leads to the widening of difference between the two, resulting in a very fast rise in growth of population.

In the third stage: the birth rate and death rate become stable at low level, resulting in a very slow rise in population.

Ans to Q No 3: Prior to 1921, India was at the first stage of demographic transition. The year '1921' is also called the year of great divide. This is so because before 1921, the rise of population was very slow and irregular, but after 1921 there was rapid and uninterrupted increase in it.

Ans to Q No 4: At present India is in the second stage and it is predicted that India will enter the third stage very soon.

Ans to Q No 5: Sex ratio shows the number of females per thousand males. As per 2001 census, there are 933 females per thousand males. There is marginal increase over the figure of 1991 census which was 927.

Table 2.3: Relative growth rate of rural and urban population

Year	Percentage of rural population	Percentage urban population	Year	Percentage rural population	Percentage urban population
1901	89.0	11.0	1961	82.0	18.0
1911	89.6	10.4	1971	80.1	19.9
1921	88.7	11.3	1981	76.7	23.3
1931	87.8	12.2	1991	74.3	25.7
1941	85.9	14.1	2001	72.2	27.8
1951	82.7	17.3	2011	68.8	31.2

Source: *Indian Economy, Datt and Sundharam, 2016.*

Over the time, the percentage of urbanisation has been increasing gradually. But the overall picture remains the same; thus, the Indian economy may be described as a rural economy as against western economies which are often designated as industrial or urban economies.

This trend depicts the structure of the Indian economy. With inadequate industrial infrastructure, there is little increase in the industrial development. The result is two fold: *first,* urbanisation as indicated by the urban population is no doubt, more than what it was before, but it is still very small in magnitude. *Secondly,* since agriculture continues to be the main occupation of the people, the absolute rural population is much bigger in size.

- **Occupational Distribution of population :** Occupational distribution of the working population of the country refers to the aggregate distribution of occupations in society, classified according to skill level, economic function, or social status. The occupational distribution of an economy depends on the importance given to different industries, level of technology, nature of labour market and on different social issues. The occupational structure is described and analysed by means of various classificatory schemes, which group similar occupations together according to specific criteria such as skill, employment status, or function. Such classifications are also used as a basis for the empirical analysis of economic and social class. The working population

of India according to 2001 Census report is 39.26% among the total population of the nation. In rural and urban areas the workforce participation are 41.97 and 32.23%, respectively.

The following table 2.4 shows the different estimates of the occupational distribution of the work force of India over the years viz., 1961, 1993-94 and 1999- 2000 :

- Over the period of time, there has been a trend of decline in the share of the agriculture and allied activities. On the other hand, the share per thousand populations has been increasing in manufacturing and repairing activities.

Table 2.4: Occupational Distribution of the Indian Work Force over the Years

Industry, Division / Group	1961		1993-94		1999-2000	
	No. of workers (in 1000)	Share (in 1000)	No. of workers (in 1000)	Share (in 1000)	No. of workers (in 1000)	Share (in 1000)
Agriculture, Forestry and Fishing	143,282	759	238,682	638	237,786	599
Mining & Quarrying	919	5	2,676	7	2,263	6
Manufacturing & Repairing Services	17,906	95	43,218	116	48,296	122
Electricity, Gas & Water	257	1	1,394	4	1,048	3
Construction	2,768	15	12,127	32	17,618	44
Trade, Hotels & Restaurants	8,171	43	28,459	76	37,728	94
Transport, Storage & Communication	3,262	17	10,757	29	14,757	37
Finance, Insurance, Real Estate & Business Services	542	3	3,653	10	4,924	12
Community, Social & Personal Services	11,571	62	32,866	88	33,200	83
TOTAL WORK FORCE	188,676	1000	373,832	1000	397,018	1000

- The first is sex ratio which shows the number of females per thousand males. As per 2011 census, there are 940 females per thousand males.
- The second is age composition. The age composition in India shows the percentage of workforce is the age group 15-60 is 58.2 but at the same time a major portion is unproductive consumers.
- The third is density of population which shows the ratio of population to land. The fourth is rural urban ratio. The urban population has grown rapidly since 1961. But there is variation in the level of urbanisation among different states. In spite of high rate of urbanisation, a majority of population lives in rural area.
- The percentage of total population living in rural area is 72.2 in 2001. Occupational distribution shows the aggregate distribution of occupation in a society. The occupational structure is described and analysed by means of various classificatory schemes, which group similar occupations together according to specific criteria such as skill, employment status, or function.
- As the human being contributes to growth and development by providing labour as well as innovative and entrepreneurial skill, it is called human resource.
- India is experiencing very high rate of population growth. But it has been expected that the population size will soon become stable.
- Growth and development may contribute to the control of population size.
- The human development index (HDI) is a summary measure of human resource development. It measures the average achievements in a country in three basic dimensions of human development viz. healthy life, knowledge and standard of living. These three qualitative measures are supported by quantitative parameters such as life expectancy at birth, literacy/education and per capita GDP respectively.

2.8 FURTHER READING

1) Agrawal, A. N. (2019). *Indian Economy: Developmental Problems and*

Table 2.6: India's Position in the Indices (HDR, 2019)

1.	Life expectancy at birth (in years)	69.4
2.	Expected years of schooling	12.3
3.	Means years of schooling	6.5
4.	GNI per capita (PPP US$)	6,829



ACTIVITY 2.1

Try to find out the ranks of India and its neighbouring countries in the Human Devlopment Reports (as many as possible) published by the UNDP.

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CHECK YOUR PROGRESS

Q 7: What does the life expectancy at birth indicate? (Answer in about 40 words).

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Q 8: What is meant bypurchasing power parity? (Answer in about 30 words)

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2.7 LET US SUM UP

- To outline the scenario of population growth of India it is important to know some of the characteristics of the population.

- The construction sector has also shown an increasing trend in the work force participation. Similar trend has been recorded in work force participation in transportation, storage and communication, finance, insurance and real estate.
- Even when the share of the agricultural sector is declining over the period of time, but the sector still engages the largest number of workers. Thus, the Indian economy is still characterised as a primitive economy, primarily led by farmers, fishermen and agricultural labours.



CHECK YOUR PROGRESS

Q 5: State is the meaning of sex ratio. Trace the causes behind the imbalance in sex ratio in India. (Answer in about 50 words)

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Q 6: Briefly enumerate the age composition of the population of India. (Answer in about 40 words)

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2.6 INDICATORS OF HUMAN DEVELOPMENT

The concept of human development emphasises on positive freedom as a key element in any definition of a good society. It judges a society by policies, procedures, and structures by which the needs are met—whether they promote moral responsibility, rational choice and other

features of full human development. Such a society can enable its citizen to aspire to achieve greatness, to develop virtues and loyalty, to become skilled and artistic, and also to attain wisdom. Such opportunities can build capability.

Human-centered development has the ultimate objective of enabling all people to enjoy long, healthy and creative lives. It weaves the development process around people, rather than weaving people around the developmental process. Economic growth is also important but it is a way, not an end. In the long run, it is human growth that matters most, not economic growth.

Since 1990s, the United Nations Development Programme has been issuing the ***Human Development Report*** with the Human Development Index as a comprehensive measure of human development. The basic tenet of the Human Development Report is that a long and healthy life along with the basic educational skills of reading and writing and being capable of maintaining a decent standard of living are the essential components of human development.

As a result, the HDI has been used to measure human development through the following three indices:

- *A long and healthy life*, as measured by **life expectancy at birth**. Thus, it indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life.
- *Knowledge*, as measured by the **adult literacy rate** (with two-third weight) and the **combined *gross enrolment ratio*** in primary, secondary and tertiary levels of education (with one-third weight), and
- *A decent standard of living*, as measured by Gross Domestic Product *(GDP)* **per capita in purchasing power parity (PPP) in terms of US dollars**.

LET US KNOW



Gross enrolment ratio : The gross enrolment ratio (GER) or gross enrolment index (GEI) is a statistical measure used in the education sector by the UN in its Education Index. The GER gives a rough indication of the level of education from kindergarten to postgraduate education – known in the UK and some other countries (mostly in the Commonwealth of Nations) as primary, secondary, and/or tertiary – amongst the residents in a given jurisdiction.

In the UN, the GER is calculated by expressing the number of students enrolled in primary, secondary and tertiary levels of education, regardless of age, as a percentage of the population of official school age for the three levels.

Purchasing power parity (PPP): It is the rate of exchange that accounts for price difference across countries, allowing international comparisons of real output and incomes. In the calculation of PPP, the economy of the United States is used as a reference, so that country is set at 100.

Now, let us consider India's achievements in different indicators of the Human Development Index in the recent years. We have taken the HDI of 2007/08 and 2019.

Table 2.5: India's Position in the Indices (HDR, 2007/08)

1.	Life expectancy at birth (in years)	63.7
2.	Adult literacy rate (in %)	61.0
3.	Combined gross enrolment ratio (%)	63.8
4.	GDP per capita (PPP US$)	3,452

Please note that some changes have been made in the methodology of calculationg HDI from time to time. The latest HDR of 2019 reflects that India was placed in 129th position and the different indicators recorded in case of India are as follows:

80% of total electricity generated (utility and captive) in India is from coal. According to Greenpeace, an International NGO, the largest coal belt in India is at Jharia of Jharkhand having 19.4 billion tons of cooing coal. Before coal mining Jharia had forests inhabited by tribes. In 1971 the coal mines were nationalized and Bharat Cooking Coal Limited (BCCL) took over Jharia coal mines.India accounts for the world's greatest concentration of coal seam fires. So areas surrounding coal fields usually suffers from pollution of air, water and land.In India coal are mainly found in Eastern and South central India. Jharkhand has the highest deposit of coal.

Table 3.2 shows the coal reserve in different states of India.

Table 3.2: Coal reserve in India by states

States	Coal Reserve (In Billion Metric Tons)	States	Coal Reserve (In Billion Metric Tons)
Jharkhand	83.15	Bihar	1.37
Odisha	79.30	Uttar Pradesh	1.06
Chhattisgarh	57.21	Meghalaya	0.58
West Bengal	31.67	Assam	0.53
Madhya Pradesh	27.99	Nagaland	0.41
Telangana	21.70	Sikkim	0.10
Maharashtra	12.30	Arunachal Pradesh	0.09
Andhra Pradesh	1.58	India	319.0

Source: Ministry of Coal, GOI

3.3.2 Oil and Natural Gas

Crude oil and natural gas is the second and third largest producer of electricity in India just after coal. They contributed 10.34 per cent and 8.7 per cent of total electricity generated in India respectively. As on 31 March 2018, India had estimated crude oil reserves of 594.49 million tons (MT) and natural gas reserves of 1339.57 billion cubic meters (BCM). In 2017 , India was the third top crude oil consumer globally. About 4.8% of global consumption was done in India which is equivalent to 221 Mt. In the same year the net crude oil (including crude oil products) importswas188 Mt which puts India in third rank among Oil importer countries. India has a huge demand for oil and imports 82% of its oil needs. But by 2022 India aims to reduce her oil

There are several interrelated socio-economic and political causes behind the imbalance in sex ratio in India. But the frequently quoted cause are–

- First, a girl child is often ignored in the society. Some societies practise infanticide and foeticide,
- Secondly, the interval between two babies is very short. This leads to death of many women, and
- Thirdly, there may be problems in the methods of estimation of sex ratio.

Ans to Q No 6: The age composition of India shows that-

- The working population in the age group 15-60 is 58.2. but against this a high percentage of population(35.6 percent) is unproductive.
- But the percentage of population in the age group 60 and above is as low as 6 percent because of low life expectancy.

Ans to Q No 7: Life expectancy at birth indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life.

Ans to Q No 8: Purchasing power parity is the rate of exchange that accounts for price difference across countries, allowing international comparisons of real output and incomes. In the calculation of PPP, the economy of the United States is used as a reference, that country is set at 100.

2.10 MODEL QUESTIONS

Short Questions (Answer each question in about 150 words)

Q 1: Discuss the three stages of demographic transition.

Q 2: Write a short note on the construction of the Human Development Index.

Q 3: What do you mean by occupational distribution of population? Briefly discuss how the occupational distribution of population in India has changed over the period of time.

Essay type Questions (Answer each question in about 500 words)

Q 1: What is human resource? Is there any relation between development and population size?

Q 2: Critically discuss the trends of population of India in the context of the theory of demographic transition.

Q 3: What are the different characteristics of population? Discuss in the context of Indian population.

Q 4: What is the meaning of human development? What are the different components of human development considered in the construction of the human development index?

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demands. It is expected that by 2030, India's energy imports is expected to exceed 53% of the country's total energy consumption.

Table 3.1 shows the primary energy consumption in India in the calendar year 2018. From the table it is seen that the highest consumption is of Coal followed by crude oil. The lowest consumption is of nuclear energy.

Table 3.1 : Primary energy consumption in India in 2018

Primary energy Head	Primary energy consumption (in Million tons)	Percentage (%)
Crude oil	239.1	29.55
Natural gas	49.9	6.17
Coal	452.2	55.88
Nuclear Energy	8.8	1.09
Hydro electricity	31.6	3.91
Renewable Energy	27.5	3.4
Total	**809.2**	**100**

In the field of electricity generation India is in advantageous position. She is the surplus producer and even slight exporter of electricity.

In 2017-18, the energy consumption per capita is 55 lakh kcal excluding traditional biomass use. The energy intensity of the Indian economy is 56 Kcal /INR(0.2332 Mega Joules per INR). Due to rapid development projects the demand for energy in India has increased manifolds. Therefore the energy market is growing very rapidly in recent years. By 2035 Indian market is expected to become the second-largest in global energy demand and will consume 18% of the rise in global energy consumption. Now India's growing energy demands and limited stock of nonrenewable energy like domestic oil and gas reserves compels the country to harness the nontraditional or alternative sources of renewable energy whose supplies are unlimited. So importance of renewable energy like nuclear energy, solar energy, wind energy or tidal energy has increased.

The various sources of energy are summarized in the following.

3.3.1 Coal

India was the fourth largest coal producer in 2017 with 294.2 million tons (7.8% global share). You will be surprised to know that nearly



LET US KNOW

What is Infrastructure?

Infrastructure refers to the basic physical systems that provide support to the structure of the economy. Infrastructure includes transportation facilities, telecommunications networks, and water supplies. Large scale infrastructure is generally provided by the government or publicly regulated monopolies. Private firms or through local collective action often smaller infrastructure can be generated.

The status of various infrastructures in India has been discussed in this Unit.

3.3 ENERGY AND POWER INFRASTRUCTURE

Energy infrastructure deals with production consumption and import of energy including electricity. Energy and power infrastructure include production and distribution of Coal, Oil and Natural Gas, LPG, Biomass and Charcoal, Biogas etc including solar energy and electricity. The energy policy of India is largely defined by the country's expanding energy deficit and thereby aimed on developing alternative source of energy, particularly solar energy, tidal, wind and nuclear energy. India ranks 81 in overall energy self-sufficiency in 2014 and energy sufficiency in India are 66 per cent. India ranks second after China in renewables production with 208.7 Million Tons in 2016.In India,during 2018, the total investmentin energy sector was 4.1% of total global investment (US$ 75 billion of US$ 1.85 trillion global investment). The primary energy consumption like consumption of coal, oil etc. in India grew by 7.9% in 2018 and is the third biggest after China and USA with 5.8% global share. So to meet the huge demand India has to import different types of primary energy. In 2018, India's net imports are nearly 205.3 million tons of crude oil and its products, 26.3 million tons of LNG (Liquefied Natural Gas) and 141.7 Million Tons of coal, which is equal to the 373.3 Million tons of primary energy or 46.13% of total primary energy consumption. It is seen that India is largely dependent on fossil fuel imports to meet its energy

UNIT 3: INFRASTRUCTURE IN THE INDIAN ECONOMY

UNIT STRUCTURE

3.1 Learning Objectives
3.2 Introduction
3.3 Energy and Power Infrastructure
3.3.1 Coal
3.3.2 Oil and Natural Gas
3.3.3 Biomass and Charcoal
3.3.4 Wind, Nuclear and Solar Energy
3.3.5 Electricity
3.4 Transport System
3.4.1 Rail Transport
3.4.2 Road Transport
3.4.3 Air Transport
3.4.4 Water Transport
3.5 Communication System
3.5.1 Postal Service
3.5.2 Telecommunication
3.5.3 Radio and Television
3.5.4 Internet
3.6 Urban Infrastructure in India
3.7 Smart Cities Mission
3.8 Industrial Corridor
3.9 Let Us Sum Up
3.10 Further Reading
3.11 Answers to Check Your Progress
3.11 Model Questions

3.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- acquire an in depth knowledge about the latest development of

infrastructure in the field like energy and power and transport and communication

- discuss development of urban infrastructure in India along with the government schemes for development is also added to it
- acquire knowledge of the concepts like Industrial corridors and smart cities mission
- describe the recent infrastructural development in the Indian economy.

3.2 INTRODUCTION

The development of an economy depends on mainly its social overhead capitals (SOCs) which we call as infrastructure. We also know that Infrastructure, be it social or economic, offers foundations for the smooth functioning of the economy and thereby increasing the pace of economic development. In India the main catalyst for the development is nothing but the Infrastructure sector. Realizing the great role of this sector as an agent to speed up India'sall round development, government initiating various policies for boosting up infrastructure in the country. Though, this sector is one of the largest receivers of Foreign Direct Investment inflows in India, at present the infrastructural sector of India is not much satisfactory to compete globally. For instance, in 2018, India ranked 44th out of 167 countries in World Bank's Logistics Performance Index (LPI) 2018. So the demand for good and world class infrastructure in India is very high. However the remarkable achievement has been made in the last four years in terms of growth of transport and communication and energy sector. The total national highways length increased from 92,851 kms in 2013-2014 to 122,434 kms in 2017- 2018. Energy deficit reduced to 0.7 per cent in 2017-18 from 4.2 per cent in 2013-14. India's rank jumped to 24 in 2018 from 137 in 2014 on World Bank's Ease of doing business - "Getting Electricity" ranking. Number of airports has increased to 102 in 2018.

According to a report, for maintaining sustainable development with strong infrastructural facilities India needs an investment of 50 trillion us

dollar by 2022. In the coming years this sectors will become a source of investment, employment and income. For instance only 24 per cent of National Highway Network in India is four-lane. For expansion, there is much greater scope for employment and investment in this field. The NDA government announced the project like smart cities for urban development andhousing for all .This kind of initiatives will boost up the investment and optimism and growth of the sector and thus attract the global players in the field of infrastructure.

The Government of India is expected to make a huge investmentin the fields like highways, renewable energy and urban transport in the coming years. For example in the Union Budget 2019-20, the following initiatives were taken to boost up infrastructural sector.

- The Government of India has given a big push to the infrastructure sector by allocating Rs 4.56 lakh crore (US$ 63.20 billion) for the sector.
- Rs 38,637.46 crore (US$ 5.36 billion) is allocated for Communication sector to development of post and telecommunications departments.
- Rs 66.77 billion (US$ 9.25 billion) is allocated for the Indian Railways under Union Budget 2019-20. Out of this allocation, Rs 64.587 billion (US$ 8.95 billion) is capital expenditure.
- Road transport and highway receives Rs 83,015.97 crore (US$11.51 billion)
- Allocation of Rs 8,350.00 crore (US$ 1.16 billion) to boost telecom infrastructure.
- Water supply for all households in 500 cities
- Rs 3,899.9 crore (US$ 540.53 billion) to increase capacity of Green Energy Corridor Project along with wind and solar power projects.
- Allocation of Rs 888.00 crore (US$ 110.88 million) is made for the up gradation of state government medical colleges (PG seats) at the district hospitals and Rs 1,361.00 crore (US$ 188.63 million) for government medical colleges (UG seats) and government health institutions.

3.5.1 Postal Service

India has the largest postal network in the world. The postal system in India was started in 1854. At that time Department of Posts has been created with on an around 700 post offices. Currently, there are more than 1.5 lakh post offices across the country. In recent years, the Government has given more importance on the tribal, hilly, and rural areas and thereby accelerating the reach of country's postal network. Now India's postal network has the few advanced features like saving banks, satellite money order, a hybrid mail service with electronic devices and metro channel service in metro cities etc.

3.5.2 Telecommunication

In 1851, telecommunication services were introduced in India and the first telegraph message was sent between Kolkata (erstwhile Calcutta) and Diamond Harbor. However telegraph service has been closed permanently in 2013. In 1881-82, telephone services were launched and in due course, telecommunications services have undergone phenomenal growth and change. In the post liberalization period the telephone service has shown a robust growth. The National Telecommunications Policy of 1994, divided the country into 20 circles for basic telephones and 18 circles for mobile-related services. The Mahanagar Telephone Nigam Limited (MTNL) and the Bharat Sanchar Nigam Limited (BSNL) are the two public sector telecom company in India.

3.5.3 Radio and Television

Radio services in India started in twentieth century only. Radio broadcasting started in 1927 and commercial broadcasting started in 1967. Television, on the other hand, started regularly from 1965. In 1976, it was separated from the All India Radio (AIR) and Doordarshan was formed. Currently, the television industry is a huge

import by 67 per cent and for this focus would be on local exploration, extensive use of renewable and alternative source of energy. Oil and natural gas are mostly found in Assam, Gujarat and East and Western offshore of the country. Assam has a reserve of 159.96 MT of crude oil and 158.57 BCM of natural gas which is the highest among the states in India. However the largest reserve of oil and natural gas is found in Western offshore

Liquefied petroleum gas:Nearly 10.52 million tons liquefied petroleum gas (LPG) was consumed during April to September 2018 (six months) in domestic sector mainly for cooking. The number of domestic connections are 247 million (one connection for five people) with a circulation of more than 368 million LPG cylinders. India is second largest consumer of LPG globally.Most of the LPG requirement is imported. Piped city gas supply in India is not yet developed on major scale.

3.3.3 Biomass and Charcoal

Biomass is a renewable energy source and its use for energy generation in carbon neutral fuel. It is carbon neutral because it would also release greenhouse gases like methane and carbon dioxide when it is left to degenerate without using as energy source. India produces about 450-500 million tonnes of biomass per year. 32 percent of all primary energy used in the country is from biomass. Plants like Jatropha curcas, Neem, Mahua and other wild plants are identified as the potential sources for biodiesel production in India. Presently, only 20% of households in India use biomass and charcoal for cooking purpose. In addition biomass is also used marginally in commercial cooking, electricity generation, process industries, etc. The total biomass use in India is nearly 177 Million tons in the year 2013. Nearly 750 million tons of nonedible (by cattle) biomass is available annually in India which can be put to use for higher value addition.

3.3.4 Wind, Nuclear and Solar Energy

India's position in world's wind power market is fourth largest. The Government is about to add 100,000 MW of solar power capacity by 2020.

India has also planned to increase the contribution of nuclear power from 4.2% to 9% to overall electricity generation capacity within 25 years. The country has five nuclear reactors under construction (third highest in the world) and plans to construct 18 additional nuclear reactors (second highest in the world) by 2025.

Solar energy is also a renewable source of energy which can be harnessed very effectively. The energy of sun is limitless and can be converted to electricity using appropriate technology. The cost of solar energy in India is lower than any other type of power generation in India. Also the cost of solar thermal power project plan in India is cheaper than fossil fuel plants. Very shortly, solar electricity price is going to become the benchmark price for deciding the other fuel prices based on their ultimate use and advantages.

3.3.5 Electricity

About 80% of the Indian population had access to electricity. By 2013, India became the world's third largest producer of electricity with 4.8% global share, surpassing Japan and Russia.India ranks 7th globally in hydropower generation during the year 2015.

India has 111 gigawatts (GW) (32%) installed capacity of renewable energy and set a target of 175 GW by 2022. This would include 100 GW capacity from solar energy sources, 60 GW from wind power, 10 GW from bio power, and 5 GW from small hydropower. India is one of the world leaders in renewable energy investments and installations. In 2018 the central government set up a US$350-million fund to finance solar projects.

major ports and 187 minor ports in India.



LET US KNOW

Six National Water Ways:

NW1- Allahabad along Ganga River,

NW2- Sadiya-Dhubri along Brahmaputra River,

NW3- Kottapuram-Kollam,

NW4- Bhadrachalam to Rajahmundri and Wazirabad to Vijaywada along Godavri and Krishna River,

NW5- Mangalgarhi to Paradeep and Talcher to Dharmara along Mahanadi and Brahmnai River,

NW6- Lakhipur to Bhanga along the Barak River.



CHECK YOUR PROGRESS

Q 1: Name the four metro cities that are connected by the Golden Quadrilateral.

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Q 2: Which national waterway covers the Dhubri- Sadiya stretch of the Brahmaputra?

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Q 3: Which train in India cloaks the highest speed?

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3.5 COMMUNICATION SYSTEM

We all know that the communication system of any country includes postal and telegraph services, telecommunication systems, television and broadcasting, and also information services, etc. The following are the different types of communication system in India.

International Airport Authority of India and National Airports Authority were merged to form Airports Authority of India. The authority manages the Civil Aviation Training College at Allahabad and National Institute of Aviation Management and Research at Delhi. Aviation in India, broadly divided into military and civil aviation, is the fastest-growing aviation market in the world. Prior to 2016, India had 75 operational airports, built over a century. In the year-and-a-half since, that number has increased to 100. The credit for boosting in connectivity goes to UDAN, a government scheme launched in October 2016, that has linked 25 smaller cities and towns by air. Pawan Hans Helicopter Limited has providing helicopter support services to the petroleum sector like ONGC, ODL etc. and also provides services to certain state Governments, PSU and in the North-Eastern States.

3.4.4 Water Transport

Water transport in India is one of the cheapest modes of transportation. Cost of water transportation per kilometer is 50 paise only as compared to Rs 1 in railway and Rs 1.5 in roadways. India has an extensive network of inland waterways in the form of rivers, canals, backwaters and creeks. The total navigable length is 14,500 km (9,000 mi), out of which about 5,200 km (3,200 mi) of river and 4,000 km (2,500 mi) of canal can be used by mechanized crafts. About 44 million tonnes (49,000,000 short tons) of cargo are moved annually through these waterways using mechanized vessels and country boats. Freight transport by waterways is highly under-utilized in India compared to other large countries and geographic areas such as the United States, China and the European Union. The total cargo moved (in tonne kilometres) by inland waterways was 0.1 percent of the total inland traffic in India, compared to the 21 percent figure for the United States. There are six national water ways set-up by Inland water ways Authority of India in 1986. There are 13

3.4 TRANSPORT SYSTEM

We know that the transport system in India includes Rail transport, Road transport, Air transport, water transport and portal connectivity. India has one of the largest road networks in the world, largest railway system in Asia and second largest in the world.

3.4.1 Rail Transport

Indian Railway is the national railway network which is operated by Ministry of Railway. The first rail railway line in India was operated for public in 1853, between Bombay (Now Mumbai) to Thane over distance of 34 km and it was nationalized in 1950.Indian Railway is the 3rd largest rail network in the world after US and China. It is a multi-gauge, multi-traction system covering Broad Gauge (1676 mm), Meter Gauge (1000 mm), Narrow Gauge (762/610 mm) with. route length of 67,368-kilometre (41,861 mi) and total track length of 121,407-kilometre (75,439 mi) as of March 2017.Indian Railway runs more than 20,000 passenger trains daily, on both long-distance and suburban routes, from 7,349 stations across India. The fastest trains in Indian railways are Rajdhani Expresss, Shatabdi Express and Gatiman Express. Indian railways has also introducedthe semi-high speedVande Bharat Express (also called asTrain-18), between Delhi-Varanasi and Lucknow-Delhi with a maximum track speed of 180 km/h. Train 18 is so far the fastest train in India. The Vivek Express - from Dibrugarh to Kanyakumari - travels 4,273 km, making it the longest-run in terms of total time & distance. The Konkan Railways passes through 3 states of India - Goa, Maharashtra and Karnataka. It runs along the Indian west coast parallel to Arabian Sea and Western Ghats. It is an extremely beautiful and scenic route running from Maharashtra till Karnataka (112mph). The railways recognised by UNESCO are Darjeeling, Himalayan Railways, Nilgiri Mountain Railways, Chhatrapati Shivaji Terminus, and Kalka-Shimla Railways.

Indian Railway runs more than 9,200 freight trains daily. Indian Railway has 17 zones. The production units are Chitranjan Locomotive works at Chitranjan, Diesel Locomotive works at Varanasi, Diesel Loco modernization works at Patiala, Integral coach Factory at Chennai, Rail coach Factory at Kapurthala, Rail wheel factory at Bengaluru. Indian Railway becomes the world's eighth-largest employer, it had 1.308 million employees as of March 2017. In 2018, IR carried 8.26 billion passengers and transported 1.16 billion tons of freight. In the fiscal year 2017-18, IR is projected to have revenue of ?1.874 trillion (US$27 billion), consisting of ?1.175 trillion (US$17 billion) in freight revenue and ?501.25 billion (US$7.3 billion) in passenger revenue.



LET US KNOW

The Dedicated Freight Corridor Corporation of India Limited (DFCCIL) is a corporation run by the Ministry of Railways (India) to undertake planning & development, mobilization of financial resources and construction, maintenance and operation of the different dedicated freight corridors. It is both enabler and beneficiary of other key Government of India schemes, such as Industrial corridor, Make in India, Start-up India, Stand-up India, Sagarmala, Bharatmala, UDAN-RCS, Digital India, BharatNet and UMANG.

Recently NITI Aayog has been planning to make a holistic development in 150 trains and 50 railway station which a strong potential to draw private investment. The cost of development of railway stations in metro cities in India is pegged at about Rs 10,000 crores, while that in tier-2 cities could be between Rs 3,000 crores and Rs 4,000 crores.

3.4.2 Road Transport

Roads help in connecting far-fetch villages, interior countryside and hill areas which are not connected with railways. It is complimentary

to railways. It acts as arteries for goods and passenger arriving at the railway station and often provides last mile connectivity. India has the one of largest road network across the world. India's road network is the third largest in the world spanning over a total of 5.5 million km. This road network transports 64.5 per cent of all goods in the country and 90 per cent of India's total passenger traffic uses road network. Nagpur plan of 1943 classified the roads into four categories- National Highway, Highway, State Highway, District roads and Village roads. National Highways comes under jurisdiction of National Highway Authority of India (NHAI). NH 44 covers the North-South Corridor of NHDP and it is officially listed as running over 3,745 km (2,327 miles) from Srinagar to Kanyakumari is considered as the longest highway.National Highway 47A has length of 6 km that links the Junction with NH 47 at Kundanoor to the Town of Willington Island in Cochin isconsidered as the shortest highway.



LET US KNOW

- Best Expressway in India: The Ahmedabad Vadodara Expressway is known as one of the best Expressway in India and also referred as the National Expressway1.
- Longest Elevated Freeway: Chennai Port Maduravoyal Elevated Expressway will be the longest Elevated Expressway in India
- Golden Quadrilateral (GQ) stretch which connects the four metro cities of India (Delhi, Mumbai, Kolkata and Chennai)
- National Highways are specified by Yellow and White colour milestones. State Highways are specified by Green and White colour milestones. City roads are specified by black and white colour milestones.

3.4.3 Air Transport

The Air transport is the fastest and the costlier mode of transport. It was started in 1911 in India between Allahabad and NainitalIn 1995,

4.2 INTRODUCTION

Agriculture in India has a long history dating back to ten thousand years. Today, India ranks, in the world in terms of farm output. Agriculture and allied sectors like forestry and logging accounted for 16.6% of the GDP in 2007 employing 60% of the total workforce and despite a steady decline of its share in the GDP, it is still the largest economic sector that plays a significant role in the overall socio-economic development of India.

Agricultural growth has a direct impact on poverty eradication and is also an important factor in containing inflation, raising agricultural wages and for employment generation.

India is the largest producer of milk, cashew nuts, coconuts, tea, ginger, turmeric and black pepper in the world. It also has the world's largest cattle population (281 million). It is the second largest producer of wheat, rice, sugar, groundnut and inland fish. It is the third largest producer of tobacco. India accounts for 10% of the world's fruit production with first rank in the production of banana and sapota.

Thus, it is clear that agriculture is the backbone of the Indian economy particularly in the rural areas. The rural areas are the biggest markets for low priced and middle priced consumer durables. Besides, rural domestic savings are a ready and important source of resource mobilisation. This unit will be helpful to you in getting an overall idea about Indian agriculture and various issues of this sector.

4.3 ROLE OF AGRICULTURE IN INDIAN ECONOMY

The significance of agriculture in the Indian economy can be discussed under the following major heads:

- Share of agriculture in national income,
- Role of agriculture in employment generation,
- Impact of the agricultural sector on industrial development,
- Role of agriculture in the earning of foreign revenue, and
- Its role in the overall economic growth of the country.

industry providing revenue and creating employment opportunities.

3.5.4 Internet

Internet has created a revolutionary change in the communication sector of the country. The first publicly available internet service in India was provided by Videsh Sanchar Nigam Limited (VSNL) on 15 August 1995.In 2018, India had a population of 130 crore people (1.3 billion) out of which internet user is 56 crore which accounts 41 percent of countries total population. With internet and smart phones the countries total e commerce business has shown a growth of 51 per cent.

3.6 URBAN INFRASTRUCTURE IN INDIA

India's urban area has been growing rapidly. Nearly 31% of India's current population lives in urban areas which contribute to 63% of India's GDP (Census 2011). India's urban growth is largely concentrated in large cities with a population of 10,00,000 or more, the number of cities with a population exceeding 1 million has increased from 35 in 2001 to 53 in 2011, accounting for 43% of India's urban population, and is expected to be 87 by 2030. With increasing urbanization, urban areas are expected to incorporate 40% of India's population and contribute to 75% of India's GDP by 2030.

Government of India has launched various urban development schemes in the recent years with an aim to improve quality of life and attract investment in urban areas and thereby promoting and boosting growth. One of these scheme is smart city mission which is discussed below.

Various incentives have also been offered for building up and invest in urban infrastructure. Promoting affordable housing through different rebate and discount and National Investment and Infrastructural Funds are important among them.

3.7 SMART CITIES MISSION

Government of India announced smart cities mission with an aim to

develop 100 cities by providing core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of 'smart' solutions. Actually it is an urban renewal mission. The focus is on sustainable and inclusive development and the idea is to look at compact areas, create a replicable model which will be an example for other aspiring cities. The major aspects of smart city mission are manifolds. A smart city must have adequate water supply, assured electricity supply, proper sanitation, including solid waste management ,efficient urban mobility and public transport affordable housing, especially for the poor, robust IT connectivity and digitalization, good governance, especially e-Governance and citizen participation, sustainable environment safety and security of citizens, particularly women, children and the elderly, and Health and education. The central Government proposes to give financial support to the Mission to the extent of USD 7.77 billion in the next five years (FY2015-16 to FY2019-20). In the first year, Government proposes to give USD 30.77 million to each selected Smart City to create a higher initial corpus, followed by USD 15.38 million every year for the next three years. The smart city mission comprises of city improvement, city renewal and city expansion.Smart Cities will feature urban development and expansion of housing opportunities under different schemes like Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Pradhan Mantri Awas Yojana and Swachh Bharat Mission.



ACTIVITY 3.1

Collect and study the main objectives of Atal Amrut, Pradhan Mantri Awas Yojna and Swachh Bharat Mission.

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3.8 INDUSTRIAL CORRIDOR

An industrial corridor is a package of infrastructure provided to a specific area with an aim to stimulate industrialization. We know that investors

UNIT 4 : INDIAN AGRICULTURE

UNIT STRUCTURE

4.1 Learning Objectives
4.2 Introduction
4.3 Role of Agriculture in Indian Economy
4.4 Trends in Agricultural Production and Productivity
4.4.1 Growth of Agriculture since 1951
4.4.2 Present Status of Productivity of Indian Agriculture
4.5 Factors Influencing Agricultural Productivity
4.6 The New Agricultural Strategy: Green Revolution in India
4.7 Impact of Green Revolution
4.7.1 Achievements of the New Agricultural Strategy
4.7.2 Weaknesses of the New Agricultural Strategy
4.8 Let Us Sum Up
4.9 Further Reading
4.10 Answers to Check Your Progress
4.11 Model Questions

4.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- become familiar with the place of agriculture in the Indian economy,
- be acquainted with the nature of India's agriculture,
- be able to draw the major objectives of agriculture in the context of Indian Planning,
- describe the present status of agriculture in the Indian economy, and point out the factors that affect agricultural production and productivity, and
- discuss the new agricultural strategy, viz., Green Revolution and its impact on the agricultural sector of the country.

3.12 MODEL QUESTIONS

Short questions (Answer each question in about 150 words)

Q 1: Briefly describe the communication infrastructure in India.

Q 2: Briefly discuss Smart Cities Mission launched in India.

Long questions (Answer each question in about 300-500 words)

Q 1: Explain the energy infrastructure in India

Q 2: Explain the transport and Communication system in India

Q 3: Discuss the status alternative energy sources in India

Q 4: Explain smart city mission as a part of urban infrastructure in India.

Q 5: What do you mean by Industrial corridor? Do you think industrial corridor helps to boost up industrial growth?

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will like to invest in an area which is well equipped with electricity, water supply, transport communication etc. An industrial corridor will provide all those basic infrastructural facilities to the investors and thereby attracting them towards the region to invest more. In this way the industrialization has boosted up and so economic development. An industrial corridor aims to create an area with a cluster of manufacturing or other industry. Such corridors are often created in areas that have existing infrastructure, such as ports, highways and railroads beforehand. These modalities are arranged such that an arterial modality, such as a highway or railroad, receives "feeder" roads or railways. Before creating these corridors a proper assessment of demand and viability should be made. Moreover transport option for goods and workers, land values and economic incentives for companies should be taken care of.

Economic Corridors of India or Industrial Corridors of India include: Delhi-Mumbai Industrial Corridor Project, Shendra-Bidkin Industrial Park, Chennai-Bangalore Industrial Corridor, Mumbai-Bangalore economic corridor, Amritsar-Delhi-Kolkata Industrial Corridor, Udhana- Palsana Industrial Corridor, East Coast Economic Corridor, Kochi-Bangalore Industrial corridor.



LET US KNOW

India and Japan have joined hands for infrastructure development in India's north-eastern states and are also setting up an India-Japan Coordination Forum for Development of North East to undertake strategic infrastructure projects in the northeast.



CHECK YOUR PROGRESS

Q 4: Briefly discuss the recent trend of urbanization in India. (Answer in about 60 words)

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Q 5: Mention the major focus laid down by the Smart Cities Mission in India. (Answer in about 30 words)

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Q 6: Name the economic corridors in India.

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3.9 LET US SUM UP

- The infrastructural development is very crucial for rapid economic development.
- Infrastructure includes energy and power, transport and communication etc.
- In India the recent focus in the field of energy infrastructure is towards alternative source of energy like solar, wind and nuclear energy.
- In India we have used four types of transportation like rail, road, air and water.
- Water is the cheapest mode of transportation but operating in under capacity. In the field of communication the internet users have increased substantially.
- India's urban infrastructure has developed in the recent years and expected to expand more in the coming years.
- Projects like smart cities attract investment and boost up urban infrastructural development. Industrial corridors are built up to boost industrialization and thereby economic development.



3.10 FURTHER READING

1) Datt, G and Mahajan, A. (2016). *Datt & Sundharam's Indian Economy.* New Delhi: S. Chand & Co.
2) Dhar, P.K. (2015). *Indian Economy - Its Growing Dimension.* New Delhi: Kalyani Publishers.
3) Dash, L.N. (2008). *Infrastructure Development and Indian Economy.* New Delhi: Regal Publications.



3.11 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: The four metro cities of India connected by the Golden Quadrilateral (GQ) stretch are Delhi, Mumbai, Kolkata and Chennai.

Ans to Q No 2: National Waterway 2.

Ans to Q No 3: The Bande Bharat Expressway.

Ans to Q No 4: India's urban area has been growing rapidly. Nearly 31% of India's current population lives in urban areas which contribute to 63% of India's GDP (Census 2011). The number of cities with a population exceeding 1 million has increased from 35 in 2001 to 53 in 2011, accounting for 43% of India's urban population, and is expected to be 87 by 2030.

Ans to Q No 5: The major focus of the Smart Cities Mission is on sustainable and inclusive development and the idea is to look at compact areas, create a replicable model which will be an example for other aspiring cities.

Ans to Q No 6: Economic Corridors of India or Industrial Corridors of India include: Delhi-Mumbai Industrial Corridor Project, Shendra-Bidkin Industrial Park, Chennai-Bangalore Industrial Corridor, Mumbai-Bangalore economic corridor, Amritsar-Delhi-Kolkata Industrial Corridor, Udhana- Palsana Industrial Corridor, East Coast Economic Corridor, Kochi-Bangalore Industrial corridor.

have been discussed in some detail as follows :

- **Fertilizers :** After independence the use of fertilizers in India in the last 50 years has grown nearly 170 times. In 1950 the use of fertilizer per hectare in India was 0.55 Kg but by 2001-02 this figure has increased to around 90.12 Kg per hectare which further increased to 125.4 kg in 2013-14. The Green revolution during 1960s and subsequent increased intensification of agriculture were the major causes behind this growth.

  Fertilizers and pesticides have become a major cost of production in India along with the cost of other inputs like seeds and labor cost.

- **Irrigation :** Water is an essential natural resource for the survival of life, a key input for plant growth and is instrumental in the upkeep of the environment. Although water is a renewable source, it is quite dynamic and scarce. The source of all water is affected by a number of factors. As a result, rainfall in India is highly variable, irregular and undependable in terms of distribution and amount. The highest and lowest annual average rainfall in India is 10,000 mm (Khasi-Jaintia Hill, Meghalaya) and 100 mm in Rajasthan, respectively. The distribution of water is highly skewed and to make the distribution more equitable it better the technical feasibility of inter basin transfer of water by linking the Himalayan and Peninsular rivers has been examined and the proposal is under consideration of the Government of India.

- **Farm mechanisation :** Farm mechanisation in the agricultural sector results in:
  - Timely field operations. This increases productivity, reduces crop losses and improves the quality of agro produce,
  - Increased land utilization and ensuring efficient use of the inputs, and
  - Increased labour productivity by the use of labour saving devices, which are also cost effective and eco-friendly.

  So far, the use of tractors has been on the increase. The sale of tractors during 2005-06 touched 2,92,000 units. Mechanisation indicator is one of the measures of modernisation of agriculture of a country.

- Other important roles of the agricultural sector
- Share of agriculture in national income: Since independence, the share of agriculture in national income has declined continuously. This can be viewed from the following table 4.1.

Table 4.1: Share of Agriculture in National Income (GDP)

Period	Share of agriculture in GDP
1950-51	55%
1970-71	44%
1990-91	31%
2000-2001	26%
2005-06	20%

Source: Economic –Survey 2006-07, Table 1.3, RBI Annual Report, 2006-07.

From the above table 4.1, it can be seen that in 1950-51, the share of agriculture in the GDP was around 55%. As the process of industrialization and economic growth gathered momentum under the five year plans with manufacturing and service sectors growing rapidly, the percentage share of agriculture in the GDP declined and reached a level of only 20% in 2005-06 and 18% in 2006-07. In 2007-08, the share of agriculture in the GDP was 17.8% (Source?).

- **Role of agriculture in employment generation:** Though the share of agriculture in national income has considerably declined, yet a very high proportion of the working population in India is still engaged in this sector. Data provided by the Census of India reveal that in absolute terms, agriculture provided employment to 98 million persons in 1951. The number of people working on land (cultivators and agricultural labourers) increased to 235 million in 2001. In terms of percentage, however, people working on land came down from 70% to 59% during the five decades between 1951 and 2001.

  The Tenth five year plan (2002-2007) report estimated that the agricultural sector still provides employment to 57% of India's workforce and is the single largest private-sector occupation. It is disturbing that

the proportion of agricultural labourers has increased from 20 per cent to 27 per cent between 1951 and 2001 but that of cultivators registered a decline from 50% to 32%. This shows clearly the growing pauperisation (pauperisation means making poorer than before) of the rural peasantry.

- **Impact of the agricultural sector on industrial development:** Indian agriculture has been the source of supply of raw materials to its leading industries. Cotton and jute textile industries, forest-based industries, sugar, flour mills, edible oils etc depend on agriculture directly. Other small-scale and cottage industries like handloom weaving, oil crushing, rice husking etc depend upon agriculture for their raw materials. Together they account for 50% of income generated in the manufacturing sector in India.

  However, in recent years, the significance of agriculture to industries is going down as many new industries have come up which are not dependent on agriculture. But the importance of food processing industries in recent years is being recognized both for generation of income and employment.

- **Role of agriculture in the earning of foreign revenue:** Agricultural products like tea, sugar, oilseeds, tobacco, spices etc constitute the main items of exports of India. Broadly speaking, the proportion of agricultural goods which are exported is about 50% of our exports. Again, certain manufactured products which use raw materials of this sector viz., jute, clothes and sugar contribute to another 20% to the aggregate export volume of the country. Thus, the agricultural sector contributes to 70% of India's export in terms of volume. The Tenth plan estimated that agriculture contributed about 15% of the total export earnings in terms of revenue. This has a great significance for economic development. Increased export helps the country to pay for the increased import of machinery and raw materials.

- **Role of agriculture in the overall economic growth of the country:** Agriculture in India is one of the major factors for the growth of the Indian economy which is still primarily agrarian. Agriculture is the most

- Decline in investment in agriculture. (We shall discuss this issue in some detail in unit 6 of the course.)
- Limited success of the land reform measures and growing exploitation of tenants. (We shall discuss this issue in some detail in unit 5 of the course.)
- Failure to control growth of rural population.
- Unbalanced regional agricultural development.



CHECK YOUR PROGRESS

Q 3: Which factors in India have contributed to the success of its agricultural sector? (Answer in about 30 words)

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Q 4: State whether True (T) or False (F).

(a) Green revolution in India was a total failure. (T/F)

(b) Over the years in India, investments in the agricultural have recorded tremendous growth. (T/F)

4.5 FACTORS INFLUENCING AGRICULTURAL PRODUCTIVITY

India is striving to find ways and means to keep its burgeoning population adequately fed. On the one hand it is facing the problem of declining productivity and on the other, the challenges posed by liberalization. Due to the small size of farm holdings (average farm holding size 1.6 ha) and socio-economic disparities, Indian agriculture continues to be dependent upon human (agricultural workers population 234.10 million in 2000- 01) and the animal power (27 million pairs). Hand tools and animal drawn implements are extensively used which involve a great amount of drudgery.

The factors that affect agricultural productivity include inputs such as utilizing human, animal and mechanical power, use of fertilizers, irrigation, crop technology, power, Agricultural Research and infrastructure. These

management practices, the total food grain production increased from a mere 50.8 million tonnes in 1950-51, to 212 million tonnes in 2006-07 and productivity increased from 522 kg/ha to more than 1707 kg/ha. The productivity of wheat, rice and oilseeds increased to a greater extent than other crops. The increase in production of food grain was possible as a result of adoption of quality seeds, higher dose of fertilizer and plant protection chemicals, coupled with assured irrigation. As a result, not only has the country achieved self sufficiency in foods but also has adequate agro-produce for export.

Our agriculture is now at the crossroads. The use of certified/ quality seeds by the farmers has increased to 700,000 tonnes. The fertilizer consumption has increased to 21.65 million tonnes (more than 112.69 kg/ha) in 2006-07 from 0.29 million tonnes in 1960-61. The use of technical grade plant protection chemicals has increased to 56.11 thousand tonnes (0.4 kg/ha) from a meagre 8.62 thousand tonnes in 1960-61.

Crop and site specific agricultural mechanization and agro-based small and medium enterprises in rural sector using a proper blend of conventional and renewable energy sources will facilitate in enhancing agricultural productivity and profitability resulting in higher income for farmers and better quality of life.

The major factors for such success of agriculture were: increase in the net areas sown, expansion of irrigation facilities, land reforms, specially consolidation of land holdings.

However, in spite of the spectacular achievements, various constraints and disturbing trends have continued to hamper the required growth of the agricultural sector. These are mainly because of the following factors:

- Agriculture in India continues to be a gamble in the monsoons.
- There is limited use of new agricultural technology. The new technologies succeeded only in wheat and to a small extent in rice. Other food crops and non-food crops did not show any perceptible improvement in production.

important sector in India. As the Indian economy is mainly based on agriculture, the annual output of products from the agricultural sector is an important factor in the growth of the economy. Agriculture also has a crucial role to play in Indian exports, where it has a significant contribution. Many of the industries in India are dependent on agriculture for raw materials. So, without agriculture and agriculture-based products, the Indian economy cannot sustain or accelerate its growth rate.

- **Other important roles of the agricultural sector:** Apart from the above, the agricultural sector also plays the following roles:
  - India's transport system secures bulk of their business from the movement of agricultural goods. The internal trade of the country is mostly in agricultural products.
  - Prosperity of the farmers leads to prosperity of industries. Prosperous farmers have greater demand for manufactures. Likewise, bad crops lead to a depression in business. Generally, a failure in the agricultural sector leads to failure of economic planning.
  - The 11th plan emphasises that the agricultural sector should act as a bulwark (bulwark means protecting something against some evils) in maintaining food security and in the process, national security as well.
  - Allied sectors like horticulture, animal husbandry, dairy and fisheries have an important role in improving the overall economic condition and health and nutrition of the rural masses.
  - To maintain the ecological balance, there is a need for sustainable and balanced development for both agriculture and allied sectors. The 11th plan recognizes this fact and gives importance to the development of the agricultural sector.



CHECK YOUR PROGRESS

Q 1: State whether True (T) or False (F).

a) In 1950-51, the share of agriculture in the GDP was around 55%. (T/F)

b) The share of agriculture in GDP declined to 17.8% in 2007-08. (T/F)

Q 2: Do you agree that the condition of the rural cultivators in India has turned worse over the years? Justify your position. (Answer in about 50 words).

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4.4 TRENDS IN AGRICULTURAL PRODUCTION AND PRODUCTIVITY

4.4.1 Growth of Agriculture since 1951

A comparative picture of the growth rate of the agricultural and allied sectors and the GDP growth rate at the same period has been shown in the following table 4.2.

Table 4.2: Growth of the Agricultural Sector since 1950-51

Period	Compound Annual Growth Rate of agriculture and allied sector	Growth rate of GDP
1951-1961	3.3	3.8
1961-1971	2.2	3.7
1971-1981	1.7	3.3
1981-1991	3.9	5.7
1991-2001	2.8	6.7
2002-2007	2.1	7.5
2007-2012	3.6	8.1

Source : Center for Monitoring Indian Economy; Basic statistics of the Indian Economy, Vol 1,August 1992, August 1994; Economic survey 2006-2007.

It can be seen from the table that the growth rate of agriculture has lagged behind that of GDP all the decades of planning shown here. Thus, during 1951-1961, the annual rate of growth in agriculture was 3.3%, while the rate of growth of GDP was 3.8%. During the subsequent decades of planning as well, the growth rate of agriculture

was below the growth rate of GDP. Despite spectacular progress achieved under the new agricultural strategy based on IADP (Integrated Area Development Project) and HYVP, the overall progress in agriculture was very poor. During 2001-2007, the annual average rate of growth of agriculture declined to 2.2%, mainly because of poor monsoon conditions, although the GDP growth rae rose to 7.2%.

But it is gratifying to note that with the green revolution, India not only became self-sufficient in food grains but also accumulated a huge food surplus – about 58 million tonnes in January 2002. As a result of adoption of improved inputs and management practices, the total food grain production increased from a mere 50.8 million tonnes in 1950-51, to 212 million tonnes in 2006-07. Thereafter, the condition of agriculture improved during the fourth decade of planning (1981-1991). The growth rate in the 1980s rose to 3.9%. But again, the compound growth rate of agriculture for the period 1991-2001 declined to 2.8%. Since then, especially during 2002-2003, agricultural production continued to decline. Although there was some improvement in the agricultural growth; yet it was much lower than the targeted growth rate of four per cent per annum. During the 11th plan, the annual growth rate in agriculture was 3.6% while the annual growth rate of GDP was 8.1%.

4.4.2 Present Status of Productivity of Indian Agriculture

During the last 57 years of planning, India's agricultural development, more commonly called the green revolution, has been applauded the world over and many developing countries have started considering India as their role model. Initially, India remained a food deficit country for almost 2 decades since independence. But with the green revolution, India not only became self-sufficient in food grains but accumulated a huge food surplus – about 58 million tonnes in January 2002. As a result of adoption of improved inputs and

mechanisation of farming has led to the problem of displacement of Labour.

- About 75% to 90% of the farmers in the rice belt have experienced a relative decline in their economic position.
- The term 'high yielding varieties' is a wrong name or word, because it implies that the new seeds are high yielding of themselves but actually they are highly responsive to certain key inputs such as fertilizers and water. The new seeds performed worse than the indigenous varieties. Increasing the nitrogen uptake of plants by using artifical fertilizers upsets their carbon/ nitrogen balance causing matabolic problems to which the plant reacts by taking up extra water.
- Because of their narrow genetic base, HYVs are inherently vulnerable to major pests and disease. The Central Rice Research Institute of Cuttack has found out that the 'high yielding varieties' are susceptible to major pests with a crop loss of 30% to 100%. The Green Revolution in India cannot therefore be considered to be a 100 percent success story.



CHECK YOUR PROGRESS

Q 10: Do you think that high yielding varieties are very suitable for India? Justify your point. (Answer in about 50 words)

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Q 11: State whether True (T) or False (F).

(a) Green revolution in India is a case of 100 percent success. (T/F)

(b) In spite of the introduction of the green revolution, India has not been able to attain self sufficiency in food production. (T/F)

- **Farm Power Availability :** India has made remarkable progress in agricultural mechanisation technology. The country has evolved a selective mechanisation model using a power mix based on animate (i.e., use of animal power) and inanimate (use of machine power) power sources. The mix of power sources includes human beings, animals, power tillers, tractors, engines and electric motors. The increasing use of tractors and irrigation pumps operated by electric motors and diesel engines are the indicators of the fact that the use of mechanical power in India has increased many fold during the last two decades.
- **Agricultural Drainage :** Drainage has become a part of integrated water management. This involves removing or conserving water as required and also being much concerned about water quality and environmental values. Land drainage and irrigation are complementary to each other for maintaining sustainable agricultural productivity. Large areas have been degraded in the country due to the problem of water-logging and salinity, especially in the irrigated alluvial tracts in north-west India (Haryana, Punjab, Gujarat etc.).
- **Women Friendly Improved Tools and Equipment for Agriculture :** Women play a major role in rural India through their active participation in agriculture. At present, the women engaged as work force in agriculture and an allied sector are estimated at about 61 million which amounts to about 30 per cent of the total rural workers in the country. Studies have shown that the Indian women work for about 14-16 hours a day to carry out various activities on farm and at home. There are more than 50 improved hand tools and equipment developed by various research organizations in the country. Out of these, 30 hand tools/ equipment have been identified which can be made suitable for women workers.
- **Agricultural Research and Development :** The apex body for education, research and extension education in the field of agriculture is the Indian Council of Agricultural Research (ICAR), established in 1929. India's transformation from a food deficit to a food surplus country is largely due to ICAR's smooth and rapid transfer of farm technology from the laboratory to the land.

The results of agricultural research include higher yielding crop varieties, better livestock breeding practices, more effective fertilizers and pesticides, and better farm management practices. Agricultural research is required not only to increase agricultural productivity, but also to keep productivity from falling.

- **Agriculture Infrastructure:** There is a positive relationship between infrastructure and agricultural productivity. The most obvious example of how public investment in infrastructure might affect agricultural productivity is through investment in public transportation. An improved highway system can reduce the farmers' cost of acquiring production inputs and of transporting outputs to market.
- Agriculture Infrastructure like seeds, fertilizers, irrigation sources should be organized to achieve the maximum momentum of growth. Factors like high soil productivity, supply of balanced crop nutrients, efficient water management, improved crops, better plant protection, post-production management for value-addition and marketing, are responsible for higher yield in the Indian agriculture. To achieve this, the government has taken definite steps to improve agriculture infrastructure in India. In the present day agriculture, application of modern biotechnologies like DNA finger printing, tissue culture, terminator gene technology and genetic cloning will play a vital role in raising the productivity.
- **Impact of Climate and Weather on Agriculture:** Industrialization, deforestation, encroachment of wetlands, grasslands etc. have affected the annual rainfall and the availability of water. These are bound to affect the land use system as well. Redistribution of rainfall and surface water will also adversely affect the biodiversity, productivity of both the terrestrial and aquatic eco-systems. In order to minimize the impact or to manage climate changes, large scale investments into proactive or anticipatory research is necessary to meet the emerging challenges of livelihood gathering by the agrarian economies like of India.
- **Government Programs:** The role of the government in the agricultural sector is pervasive. Government programs affect productivity through the allocation of resources and outputs. Government farm programmes

importance of pulses as foodgrains and its output has fallen from 16% in 1960-61 to 6% 2006-07.

- **Boost to agricultural production and employment:** The successful adoption of the new agricultural technology has led to a continuous expansion in the area under crops, increase in total production and rising agricultural productivity. Impressive results have been achieved in wheat, rice, maize, potatoes etc. The adoption of new technology has given a boost to agricultural employment because of diverse job opportunities created by multiple cropping.
- **Forward and backward linkages strengthened:** The new technology and modernisation of agriculture has strengthened the linkages between industry and agriculture. Various agro food processing units have been set up in many areas of the country.

4.7.2 Limitations of the New Agricultural Strategy

- Even today, India's agricultural output sometimes falls short of the demand. The Green Revolution, howsoever impressive, has thus not succeeded in making India totally and permanently self-sufficient in food. In 1979 and 1987, India faced severe drought conditions due to poor monsoon; this raised questions whether the Green Revolution was really a long-term achievement. In 1998, India had to import onions. Again, in recent years, it had to import sugar as well.
- Nothing like the ***Bengal Famine*** can happen in India again. But it is disturbing to note that even today, there are places like Kalahandi (in India's eastern state of Orissa) where famine-like conditions have been existing for many years and where some starvation deaths have also been reported.
- Farmers with 20 acres or more land have made the greatest gains partly by mechanising farm operations and partly by diversifying their cropping pattern. Again, the impact of



Bengal Famine: Severe famine occurred in Bengal in 1943. It resulted in huge loss of lives.



CHECK YOUR PROGRESS

Q 8: Mention the three basic elements of green revolution in India. (Answer in about 30 words)

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Q 9: State whether True (T) or False (F).

(a) The concept of green revolution is confined to India only. (T/F)

(b) In spite of the introduction of the green revolution, India has not been able to attain self sufficiency in food production. (T/F)

4.7 IMPACT OF GREEN REVOLUTION

4.7.1 Achievements of the New Agricultural Strategy

The following achievements are important.

- **Boost to the production of cereals:** The major achievement of the new strategy is the increase in the production of major cereals like wheat and rice.
- **Increase in the production of commercial crops:** The green revolution was mainly directed to increase the production of foodgrains. It did not affect the production of commercial crops or cash crops such as sugarcane, cotton, Jute, oil seeds and potatoes. However, significant improvement in the output of sugarcane took place after 1973-74. Likewise, there was considerable improvement in the production of other cash crops such as oil seeds, potatoes etc.
- **Significant changes in the crop pattern:** As a result of the green revolution, the crop pattern in India has undergone significant changes. The output of cereals has risen at the rate of 3% to 4% per annum but the output of pulses has remained stagnant or even declined .This has resulted in a decline in the

are the most common examples of government involvement in agriculture. But other examples are numerous: Tax policies are implemented to encourage private firms to undertake agricultural extension programmes. Most of the state governments are encouraging NGOs to take up extension activities.



CHECK YOUR PROGRESS

Q 5: How have the changes in climate affected the agricultural sector? (Answer in about 40 words)

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Q 6: Which organisation is called the apex body of education and research of agricultural studies in India? What has been its role? (Answer in about 50 words)

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Q 7: State whether True (T) or False (F).

(a) Men and women in India can handle all the tools used in agriculture with equal efficiency. (T/F)

(b) There is a positive relationship between infrastructure and agricultural productivity. (T/F)

4.6 THE NEW AGRICULTURAL STRATEGY : GREEN REVOLUTION IN INDIA

Between 1947 and 1967, efforts at achieving food self-sufficiency were not entirely successful. Efforts until 1967 were largely concentrated on expanding the farming areas. But starvation deaths were still being reported in the newspapers. In a perfect case of Malthusian economics,

population in India was growing at a much faster rate than food production. In 1961 India was on the brink of mass famine. The government realized the need for a dramatic improvement in food grain production. This called for a drastic action to increase yield. The action came in the form of the Green Revolution.

The term "Green Revolution" is a general one that is applied to successful agricultural experiments in many developing countries. It is to be noted that this concept is not specific to India. But it was most successful in India. The Green Revolution in India is referred to the period between 1967 to 1978. Punjab was selected by the Indian government to be the first site to try the new crops because of its reliable water supply and a history of agricultural success.

Strategies of Green Revolution in India : There were three basic elements in the method of the Green Revolution:

- Continued expansion of farming areas;
- Double-cropping in existing farmland; and
- Using seeds with improved genetics.

Let us now discuss a few points on each of these strategies.

- **Continued expansion of farming areas:** As mentioned above, the area of land under cultivation was being increased right from 1947. But this was not enough in meeting the rising demand. Other methods were also required. Yet, the expansion of cultivable land also had to continue. So, the Green Revolution continued with this quantitative expansion of the farmlands.
- **Double-cropping in existing farmland:** Double-cropping was a primary feature of the Green Revolution. Instead of one crop season per year, the decision was made to have two crop seasons per year. The one-season-per-year practice was based on the fact that there is only one natural monsoon per year. The artificial monsoon came in the form of huge irrigation facilities. Dams were built to arrest large volumes of natural monsoon water which were earlier being wasted. Simple irrigation techniques were also adopted.

- **Using seeds with superior genetics:** This was the scientific aspect of the Green Revolution. The Indian Council for Agricultural Research (which was established by the British in 1929) was reorganized in 1965 and then again in 1973. It developed new strains of high yield variety (HYV) seeds, mainly wheat and rice and also millet and corn.

As we have already mentioned, the introduction of high-yielding varieties of seeds after 1965 and the increased use of fertilizers and irrigation are known collectively as the Green Revolution. This has helped India to become self-sufficient producer of food grain production, and thus to improve the agricultural scenario of the country. Famine in India, once accepted as inevitable, has not returned since the introduction of Green Revolution in the country.

During the 1980's in spite of three years of scanty rainfall and a drought during the middle of the decade, India managed without large scale food imports, because of the increase in food grain production and the existence of a large buffer stock insulating against any agricultural crisis. By the 1990's India had attained self sufficiency in food grain production, because the rate of increase in food grain production has kept pace with the increase in population. This is the direct result of Green Revolution, improved seeds and fertilizers, better irrigation and increased awareness among the farmers.

Thus, we have discussed in the above that the growth in food-grain production is a result of concentrated efforts to increase all the Green Revolution inputs needed for higher yields: better seed, more fertilizer, improved irrigation, and education of farmers. Although increased irrigation has helped to lessen the year-to-year fluctuations in farm production resulting from the uncertainities of the monsoons, it has not eliminated those fluctuations. In the following section we shall make a critical analysis on the impact of green revolution in the country.

free the tillers of the soil from the clutches of parasite classes and to pass on the ownership of the land to the actual tillers. The other objectives of the land reforms were to remove all the barriers that existed in increasing production and productivity of agriculture, to provide security to the tillers of the soil, and to assure equality in status and opportunity to all the sections of the rural population.

Objectives of Land Reforms : Land reform measures introduced in India had the following major objectives:

- To remove the impediments to increase in agricultural production that had arisen from the agrarian structure inherited from the past.
- 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.

Strategies of Land Reforms: To achieve the objectives, the strategies adopted were:

- Abolition of intermediaries,
- Tenancy reforms, and
- Reorganization of agriculture.

Let us now discuss these strategies in brief.

- **Abolition of Intermediaries:** On the eve of independence, approximately 57 % area of the country was under the Zamindari system as an intermediary between the state and the cultivators. There was exploitation in agrarian relation which was the main cause of stagnation in the economy. Hence, it was urgently required to abolish the intermediaries for the cause of agricultural growth in the country. Legislations were passed for their abolition after independence specially during the period of the first five year plan. It was a very difficult task because in permanently settled areas such as Bihar, Orissa and West Bengal and in the areas under Zagirdary settlement such as Saurastra, land records and administrative machinery had to be built up almost from a scratch. It has been estimated that by the end of the first plan



4.8 LET US SUM UP

- Agriculture is the backbone of the Indian economy. Agriculture in India has a long history dating back to ten thousand years. Today, India ranks second in the world in farm output.
- Agriculture and allied sectors like forestry and logging accounted for 16.6% of the GDP in 2007 in India.
- Agriculture employed 60% of the total workforce in 2007.
- India is the largest producer in the world of milk, cashew nuts, coconuts, tea, ginger, turmeric and black pepper.
- The importance of food processing industries is being recognized for the generation of income and employment.
- Agriculture Planning in India is a very important tool to enhance and maximize the total agriculture based produce.
- Growth in the Indian Agriculture is based on resources being used efficiently and conservation of natural resources.
- From the third plan onwards, the greatest emphasis was laid on irrigation, fertilisers and seed technology which led to the green revolution.
- The planning commission has fixed the target of 4% rate of growth to be achieved in agriculture during the eleventh plan.
- Since 1966, the use of modern agricultural inputs has increased at a compound rate of 10% per annum.
- The new technology and modernisation of agriculture has strengthened the linkages between industry and agriculture. The new agricultural technology has made the farmer market oriented.
- The term “Green Revolution” is a general one that is applied to successful agricultural experiments in many Third World countries.
- In today’s globalised economic scenario, 100 % self-sufficiency is not considered as vital a target as it was when the world political climate was more dangerous due to the Cold War.

4.9 FURTHER READING

1) Agrawal, A. N. (2019). *Indian Economy: Developmental Problems and Policies.* New Delhi: New Age International Publishers.
2) Datt, G and Mahajan, A. (2016). *Datt & Sundharam's Indian Economy.* New Delhi: S. Chand & Co.
3) Kapila, U. (2003). *Indian Economy since Independence.* New Delhi: Academic Foundation.
4) Misra, S.K. & Puri, V.K. (2018). *Indian Economy.* New Delhi: Himalya Publishing House.

4.10 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: (a) True (b) True

Ans to Q No 2: It is true that the condition of the rural cultivators in India has turned worse over the years. This is evident from the fact that the proportion of agricultural labourers has increased from 20 per cent to 27 per cent between 1951 and 2001 but that of cultivators registered a decline from 50% to 32%. This shows clearly the growing pauperisation of the rural peasantry of the country.

Ans to Q No 3: The major factors for such success of agriculture were: increase in the net areas sown, expansion of irrigation facilities, land reforms specially consolidation of land holdings.

Ans to Q No 4: (a) False (b) False

Ans to Q No 5: Industrialization, deforestation, encroachment of wetlands, grasslands have affected the annual rainfall and availability of water. These are bound to affect the land use system as well. Redistribution of rainfall and surface water will also adversely affect the biodiversity, productivity of both the terrestrial and aquatic eco-systems.

Ans to Q No 6: The apex body for education, research and extension education in the field of agriculture is the Indian Council of Agricultural Research (ICAR. India's transformation from a food deficit to a food surplus country is largely due to ICAR's smooth and rapid transfer of



CHECK YOUR PROGRESS

Q 1: When was the Zamindari system introduced in India and what was it? (Answer in about 60 words)

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Q 2: Name the states in which the Zamindari was prevalent at the time of independence in India.

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Q 3: Who introduced the Mahalwari system in India and what was it? (Answer in about 50 words)

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5.4 LAND REFORM MEASURES IN INDIA: OBJECTIVES AND STRATEGIES

In the Zamindari system, a parasite class of zamindars did not work on land but snatched away whatever surplus above the minimum subsistence level the cultivators produced. Under the Mahalwari and Ryotwari system as well the practice of cultivation by tenants became widely prevalent and these tenants were also exploited in a number of ways.

In the post-independence period in India, to stop the exploitation of the actual tillers of the soil and pass on the ownership of land to them, land reforms were introduced. Land reform means the measures undertaken to

in most areas governed by the Zamindars. This made it difficult for the farmers to mortgage their land for borrowing. 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 pasturs, forest etc were encroached upon and the cultivator was made to pay to gain access to these.

Mahalwari System : This system was introduced by William Bentinck in Agra and Andhra and later extended to Madhya Pradesh and Punjab. In this system the whole village was treated as a unit so far as land revenue is concerned. The responsibility for collecting the land revenue and depositing it in the treasury was the village head man or a co-sharer appointed for the purpose. The ownership of land under this system was collective.

This system of land tenure also had some defects in the sense that period of settlement, fixation of land revenue etc, were different in different Mahalwari system.

Ryotwari System: Under this system the responsibility of paying land revenue to the government was of the cultivator or individual Ryot himself and there was no intermediation between him and the state. The Ryot had full right regarding sale, transfer and the leasing of land and could not be evicted from the land as long as he paid the land revenue. Under Zamindari system these rights were not available.

Under the Ryotwari system, the settlement of land revenue was done on a temporary basis. In Madhya Pradesh such temporary settlement was done after every 20 years, in Maharastra or Bombay after 30 years and in Madras or Tamilnadu and United Provinces (Uttar Pradesh) after every 40 years.

On the face of it though the Ryotwari system appears satisfactory yet it also develops various loopholes. In these areas money lenders and mahajans granted loan to cultivators by mortgaging their lands. A substantial portion of land slipped out of cultivators hold and became the property of money lenders and mahajans. The mahajans started giving land for cultivation on lease and soon a new zamindar class with all its exploitative practices started developing.

farm technology from the laboratory to the land.

Ans to Q No 7: (a) False (b) True

Ans to Q No 8: The three basic elements in the method of the green revolution in India are:

- Continued expansion of farming areas;
- Double-cropping in existing farmland; and
- Using seeds with improved genetics.

Ans to Q No 9: (a) False (b) False

Ans to Q No 10: Because of their narrow genetic base, HYVs are inherently vulnerable to major pests and disease. The Central Rice Research Institute of Cuttack has found out that the 'high yielding varieties' are susceptible to major pests with a crop loss of 30% to 100%.

Ans to Q No 11: (a) False (b) False

4.11 MODEL QUESTIONS

Short Questions (Answer each question in about 150 words)

Q 1: Write a short note on the growth of agriculture in India since independence.

Q 2: Discuss briefly the present status of productivity of Indian agriculture.

Q 3: Trace the major achievements of the new agricultural strategy in India.

Q 4: Enumerate the weaknesses of the new strategy of agriculture in India.

Essay type Questions (Answer each question in about 500 words)

Q 1: Discuss the role of Agriculture in Indian Economy.

Q 2: Write an essay on the trends of agricultural production and productivity.

Q 3: Explain the major impediments to Indian agriculture.

Q 4: What is meant by the new agricultural strategy in the context of India? Discuss the new agricultural strategies and their impact on Indian agriculture.

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UNIT 5 : LAND REFORMS

UNIT STRUCTURE

5.1 Learning Objectives

5.2 Introduction

5.3 System of Land Tenure at the Time of Independence

5.4 Land Reform Measures in India: Objectives and Strategies

5.5 Critical Appraisal of Land Reform Measures in India

5.6 Let Us Sum Up

5.7 Further Reading

5.8 Answers to Check Your Progress

5.9 Model Questions

5.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- discuss the meaning of land tenure,
- know the system of land tenure at the time of independence,
- discuss the objectives and strategies of land reforms, and
- make a critical appraisal of the land reform measures in India.

5.2 INTRODUCTION

Land tenure means the way in which an individual holds land from government. It shows the relationship between the land holder and the state. The absolute ownership of land rests with the government. Government gives the proprietary rights to individual or communities. Thus land owner is the proprietor of that land and he has to pay land revenue for that.

The tenure system of the country identifies the ownership of the land and the relation of the owner of the land with the cultivator and the government. It is concerned with the cultivator and the government. It is concerned with the rules and regulations, the terms and conditions under which the cultivator cultivates the land.

In the post-independence period, land reform measures were introduced to remove the impediments of land tenure system. This unit deliberates on these two issues.

5.3 SYSTEM OF LAND TENURE AT THE TIME OF INDEPENDENCE

At the time of independence there were three types of land tenure system prevailing in the country. These systems were the Zamindari System, the Mahalwary system and the Ryotwari system.

Zamindari System : In the Zamindari system, the land revenue was collected from the farmers by the Zamindars. This system was created by the East India Company when in 1791, 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 proprietor of large areas of land. In return, the task of collecting rent from the farmers was entrusted to them. 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 an agrarian structure in the country side which conferred the right of sharing the produce of land without participating personally in the productive process. The system was based on exploitation as it conferred unlimited rights on the Zamindars to extract as much rent as they wished. The grabbing of such a high proportion of income by a parasite class was not only socially unjust but also highly detrimental to capital formation and economic development. The actual cultivators were left with no surplus to invest in better implements, improved seeds, fertilizer and neither was there any incentive for him to increase agricultural production and productivity

Again, the record of rights in land was not systematically maintained

5.7 FURTHER READING

1) Agrawal, A. N. (2019). Indian Economy: Developmental Problems and Policies. New Delhi: New Age International Publishers.
2) Datt, G and Mahajan, A. (2016). Datt & Sundharam's Indian Economy. New Delhi: S. Chand & Co.
3) Misra, S.K. & Puri, V.K. (2018). Indian Economy. New Delhi: Himalya Publishing House.

5.8 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: The Zamindari system was created by the East India Company when in 1791, 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.

Ans to Q No 2: At the time of independence, this system was prevalent in West Bengal, Bihar, Orissa, Uttar Pradesh, Andhra Pradesh, and Madhya Pradesh.

Ans to Q No 3: The Mahalwari system was introduced by William Bentinck in Agra and Andhra and later extended to Madhya Pradesh and Punjab. In this system, the whole village was treated as a unit as for land revenue is concerned. The ownership of land under this system was collective.

Ans to Q No 4: Land tenure means the way in which an individual holds land from the government. It shows the relationship between the land holder and the state. Land holder is the proprietor of the land pays land revenue to the state.

Ans to Q No 5: Land reform means the process and measures undertaken to free the tillers of the soil from the clutches of parasite classes and to pass on the ownership of the land to the actual tillers. The other objectives of the land reforms were to remove all the barriers that existed in increasing production and productivity of agriculture, to provide security

except a few small pockets in some areas in the country in all, 173 million areas of land was acquired from the intermediaries and as a consequence about two crore tenants were brought into direct relationship with the State.

- **Tenancy Reforms:** Tenants can be classified into i) Occupancy Tenants, ii) Tenants-at-will, 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. But the tenants-at-will and sub-tenants face a lot of problems. Their existence depends on the mercy of landlords and this makes them prone to various exploitative practices adopted by the landlords. Therefore to protect these people, special laws had to be enacted and implemented.

Under tenancy reforms, the measures adopted were–

a) Regulation of rent
b) security of tenure and
c) conferment of ownership rights on tenants.

a) Regulation of rent : In the pre-independence period, the rent charged by the Zamindars from the tenants was very high. The British Government was merely interested in its share and consequently gave unlimited power of suppression to the Zamindars to squeeze the tenants. On the whole, rate of rent varied in the range of 34% to 75% of the produces in the country. Due to such highly exploitative rates, tenants could hardly maintain the minimum standard of living. As a consequence, legislations were enacted after 1947 to regulate the limits of rents and reduce the burden on tenants. The first plan stated that maximum rent should be fixed at one fourth or one fifth of the total produce.

b) Security of tenure : To protect tenants from ejection from their land and to grant them permanent rights of land holdings, legislations have been passed in most of the states. The essential aims for the legislations for the security of tenure were: i) ejection should not take place except in accordance with the provision of the law, ii) land may be resumed by an owner only for personal cultivation and iii) in the event of resumption, the tenant is assured of prescribed minimum area.

However, the degree of protection to tenants afforded by the law in a particular area depends upon the following important factors:

- Definition of tenants,
- The circumstances in which landlords are allowed to resume tenanted land for cultivation,
- Definition of the term personal cultivation, and
- Status of the land records.

c) Ownership Right for tenants : Sir Arthur Young once said "Give a man the secure possession of a bleak rock and he will turn it into a garden; give him a nine years' lease of a garden and he converts in into a desert." These words underlie the importance of land ownership. In the Second Five Year plan document, it was emphasized that ownership right should be conferred on tenants. This means the tenants should be made owners of the land they cultivate. Accordingly, many states passed legislations to confer the right of ownership to tenants.

It has been estimated that as a result of laws conferring ownership right on tenants in various states, about 12.42 million tenants have acquired ownership right over 6.32 million hectares of lands. Provisions have been made to confer the ownership right on the tenants who could not either purchase land or unwilling to purchase land due to various socio-economic reasons i.e. due to lack of purchasing power or pressure from the landowners.

It is to be noted that, in all tenancy laws of the country, persons cultivating in the lands of others on payment of rent either in cash or kind or both are treated as tenants. However in some states, sharecroppers who pay rent by division of produce are not regarded as tenants. Thus all laws aiming at protecting tenants do not help them. A limited right of resumption was thus granted by land owners for personal cultivation in all states except Uttar Pradesh and West Bengal. In some states, land owners were permitted to resume land rights 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 tenants as and when he resumes land for personal cultivation.

Q 8: State whether True (T) or False (F)

a) Tenants surrendered their land to the landlords at their own will as they were very happy with their landlords.

b) Surplus land is always distributed among the landless cultivators.



5.6 LET US SUM UP

- Meaning of land tenure is the relation of the owner of the land with the cultivator and the government. It is concerned with the rules and regulations and the terms and conditions under which the cultivators cultivate the land.
- At the time of independence there were three types of land tenure system:-Zamindari, Mahalwari and Ryotwari.
- The meaning of land reform is to stop the exploitation of the actual tillers of the soil and to pass the ownership of the land to them. Its main objectives were to remove all the impediments in increasing the agricultural productivity, to eliminate all forms of exploitation and social injustice within the agrarian system, to provide security for the tiller of the soil and assure equality of status and opportunity to all sections of the rural population.
- The strategies of land reforms are:
  - Abolition of intermediaries
  - Tenancy reforms
  - Re organisation of agriculture
- Land reforms in India is a positive milestone in the progress of agriculture and the agricultural productivity, development of the land tenure system and the source of generation of income and employment of the rural population in the country
- The success recorded by the land reform measures is far less than the actual potential. There are several snags in the process – in the sphere of legislation, lack of political will and the apathy of bureaucracy which retard the land reform policy and its implementation in the country.

- **Lack of political will :** Enactment of progressive measures of land reforms and their efficient implementation call for sincere political decisions and effective political support, direction and control. This crucial factor has been wanting in the rural areas of the country. This can be demonstrated by the large gaps between policy and legislation and between law and its implementation. Since independence, no sphere of public activity in the country the deviation between precept and practice, between policy pronouncement and actual execution has been as great as in the domain of land reforms.
- **Apathy of bureaucracy :** Side by side with the lack of political will goes the apathy of bureaucracy in implementing the land reforms. Both are intricately linked up together and the apathy of the bureaucracy flows from the lack of political will in implementing the reforms strictly. This has dampened the spirit of the approach and had an overall demoralizing effect. The very instruments of implementing land reforms have turned into instruments of subverting land reforms. The nexus between the politicians, administrators and large landowners also acted in favour of the landlords. The section of rich peasants dominates the state government, regional and local administration and served as the main instrument of land grabbing. This acted as a strong impediment in the effective implementation of the land reform measures.



CHECK YOUR PROGRESS

Q 7: It is said that lack of political will is another factor of limited success of land reform measures. Do you agree? Justify your viewpoint. (Answer in about 50 words).

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The rights of resumption combined with defects in the definition of personal cultivation rendered all tenancies insecure. The landlord could eject any tenant on the plea of personal cultivation. On account of this fact the fourth Five Year Plan recommended that all tenancies should be declared non-resumable and permanent except in cases of landlord who are serving in the defence forces or suffering from a specified disabilities and penalties should be imposed for wrongful eviction.

Many landlords compelled their tenants to give up the tenancies on their own accord. In this manner they succeeded in circumventing the tenancy law, because no law can help the tenants if they give up their right voluntarily. Landlords applied various kinds of threats and pressures on the tenants to surrender their land. Because of their weak socio-economic condition and abject poverty, the tenants easily succumbed to these pressures. On account of this, the fourth Five Year Plan recommended that voluntary surrender 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. However this provision has been enacted only in some states.

Laws relating to securities of tenure can be implemented effectively only if correct and up-to-date land records are available .In the absence of land records a person cannot claim to be a tenant. In many states of the country there were no land records or were in complete and out of date .Thus, it was urgently required to keep the land records up-to-date and to make provision for revision of records so as to provide security of the tenant.



CHECK YOUR PROGRESS

Q 4: What do you mean by the term 'land tenure'? (Answer in about 50 words)

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Q 5: What do you mean by land reform? (Answer in about 30 words)

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Q 6: State the main strategies of land reform. (Answer in about 60 words)

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5.5 CRITICAL APPRAISAL OF LAND REFORM MEASURES IN INDIA

The various measures of land reforms introduced in India is a holistic one. This has paved the way for agricultural progress in the country. The land reform measures could have been more successful, if all the states would have introduced the reforms without delay. In many cases, there was a time leg between the enactment of the reform laws and their actual implementation. Thus, in a number of cases, large amount of lands were transferred before the legalities of the land ceiling acts were put in practice.

We have already discussed that the aims of land reform measures were the fulfillment of all the five principles of National Land Reform Policy. These principles were: abolition of intermediaries, tenancy reforms with security to actual cultivators, redistribution of surplus ceiling land, consolidation of holdings and updating land records. It is a known fact that landlessness is one of the root causes of rural poverty. In an agriculturally dominant country, principal means of livelihood is access to land, which is a major source of employment and income. This access could be achieved in any of the two ways: by more equitable redistribution of land, or by providing security of tenure to tenants and sharecroppers. Out of these two ways, the scope with respect to redistribution is limited. This is because, with the

average size of land holdings declining, there is no possibility of any further fresh ceilings. Hence, efforts should be made to detect the surplus land and to distribute the existing surplus land expeditiously; and at the same time, it should also be ensured that allottees retain possession of land.

Again, land reform measures should have promoted co-operative farming in the country. But in many parts of the country, co-operative movement The fid not take off in spite of much talked about Bhoodan Movement and Gramdan Movements. Having set right the wrongs of the British government, land reform measures have succeeded in taking the agricultural economy out of stagnation.

In a nutshell, land reform measures recorded very limited success. The following factors may be held responsible for such limited success:

- **Loopholes in legislation :** The following loopholes in legislations are important :
  - The term personal cultivation was not precisely defined.
  - No limits for retention of land for personal cultivation in which intermediaries were allowed to retain substantial areas of land for personal cultivation.
  - **Limits of ceiling not uniform:** It was noticed that in some cases, the level of ceiling was not the same across the state. This created a lot of confusion and frequent disputes.
  - **Definition of tenants inadequate:** In many states, share croppers were not accorded the status of tenants, even when they cultivated a substantial part of land. Therefore, laws relating to tenancy reforms could not be used for protecting their rights. A considerable number of tenancies in India are verbal and informal. The tenants cultivating in such land are not in position to prove that they are the actual tillers of soil because their names do not appear in land records.
  - **The problem of voluntary surrender :** Landlords often forced their tenants to voluntarily surrender the land being cultivated by them either by threatening or by other means.

functioning. As against the organized industrial sector, this sector is uncertain in the sense that it is dependent on natural factors. Consequently, to offer credit, commercial banks rated more on the industrial sector than the agricultural sector.

However, after the nationalisation of 20 commercial banks in 1969, there has been much improvement in the state of affairs. The banks have increased their branches in rural areas and have increased their advances in these areas considerably. In 1969, out of total branches of the commercial banks, only 22.2 percent was in rural areas. This has increased to 42.4 percent in 2007. This shows that total number of branches of commercial banks has been increasing considerably. Similarly, the advances from the public sector banks to the agriculture have also grown. In 1969, the advances to agriculture aggregated to Rs. 164 crore only butin 2008-09 this had risen to Rs. 2,28,951 crore, accounting for 78 percent of the total institutional credit to agriculture. This further increased to Rs. 5,09,005 cr. in 2013-14 accounting for 71 percent of institutional credit to agriculture.

Thus, we can say that after nationalization, 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. This has also resulted in the expansion of activities in the non-farm sector in rural areas, and thus also accelerating the pace of private agricultural investment. It therefore follows that expansion of banking facilites has played a pivotal role in India's agricultural growth and modernisation of the sector. In addition, large number of rural people has been able to become free from the clutches of the money lenders.

Weaknesses : Despite the achievements of the commercial banks in the field of rural credit their performance and operations have a lot of limitations. These are:

- Rapid expansion of the bank branches compromises the quality of scheme preparation, particularly the anti-poverty programmes.

to the tillers of the soil, and to assure equality in status and opportunity to all the section of the rural population.

Ans to Q No 6: The main strategies of the land reform are a) abolition of intermediaries between the farmer and the state, e.g. zamindars etc., b) tenancy reforms. These include: regulation of rent, security of tenure, resumption of the land only for personal cultivation, and in the event of resumption, minimum area must be provided to the tenant, and c) conferment of the ownership to the tenant.

Ans to Q No 7: The statement has been rightly made. It is a known fact that the enactment of progressive measures of land reforms and their efficient implementation require sincere political decisions and effective political support, direction and control. This crucial factor is lacking in the rural areas of the country. This can be demonstrated by the large gaps between policy and legislation and between law and its implementation.

Ans to Q No 8: a) False b) False

5.9 MODEL QUESTIONS

Short Questions (Answer each question in about 150 words)

Q 1: Discuss the main objectives of abolition of intermediaries in the land tenure system of India.

Q 2: Briefly discuss the land tenure system prevalent in India prior to its independence.

Essay type Questions (Answer in about 500 words)

Q 1: Discuss the success and failures of land reforms in India.

Q 2: In what way is the security of tenure provided to the tenants or tillers of the soil in the land tenure system? Explain.

Q 3: Explain the objectives and strategies of the land reform measures undertaken in India.

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UNIT 6 : AGRICULTURAL FINANCE AND AGRICULTURAL MARKETING

UNIT STRUCTURE

6.1 Learning Objectives

6.2 Introduction

6.3 Need for Agricultural Finance

6.4 Sources of Agricultural Finance

6.4.1 Role of Co-operatives and Commercial Banks

6.4.2 Role of Regional Rural Banks (RRBs) and NABARD

6.5 Agricultural Marketing: Concept and Limitations

6.6 Role of Government in promoting Agricultural Marketing

6.7 Let Us Sum Up

6.8 Further Reading

6.9 Answers to Check Your Progress

6.10 Model Questions

6.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- derive the meaning of agricultural finance,
- describe the need for agricultural finance,
- trace the source of agricultural finance,
- explain the role of co-operative, commercial banks and RRBs including NABARD,
- put forward the meaning of agricultural marketing,
- discuss the concept and basic requirement of agricultural marketing,
- point out the limitations of agricultural marketing, and
- deliberate on the role of the Government in facilitating agricultural marketing.

6.2 INTRODUCTION

Agriculture is in the unorganized sector and its success and failure

played by the co-operatives and the commercial banks.

6.4.1 Role of Co-operatives and Commercial Banks

Role of the co-operatives : The first institutions established and promoted to offer agricultural credit were the institutions of co-operative credit societies. Although the co-operative movement in the country was started as early as 1904, its development was very slow. In 1951 co-operatives provided only 3.1 percent of the total rural credit. Hence, the dominance of money lenders in agricultural credit continued. However, there has been massive expansion of its operations afterwards. The co-operatives provided 15.5 percent of the total credit in 1961-62 and 22.7 percent in 1970-71. In 1992-93, the rural credit provided by the co-operatives was 53.4 percent. However, thereafter, though the amount of rural credit provided by the co-operative increased, their percentage of share in total institutional credit declined. In 2006-07, co-operative provided only 20 per cent of the total institutional credit to agriculture in that year. Thus, in the post-independence period, there has been an extensive expansion both in terms of coverage and volume of operations of these co-operatives. The performance of these co-operatives in the advancement of loans is also commendable. Even when the entry of commercial banks into the rural credit system was recommended, it was stated clearly that this should be done to supplement and not supplant the co-operative credit structure. However, large accumulated losses, persistent non-performing assets, low recovery levels and various other types of organizational weaknesses caused serious problems to these co-operatives. In fact, many co-operative institutions have continued to make losses over the years.

Role of Commercial Banks : Earlier, the share of commercial banks in rural credit was very small. It was only 0.9 percent in 1951-52 and 0.7 percent in 1961-62. The reason was that subsistence nature of agriculture and its unorganized individualistic

6.4 SOURCES OF AGRICULTURAL FINANCE

Sources of agricultural finance can be divided into two categories: non-institutional and institutional sources.

- **Non-institutional Sources :** The non-institutional sources are: a) moneylenders, b) relatives c) traders d) Commission agents and e) Landlords.

  At the time of independence, the most important source of agricultural credit was the money lenders. In 1951 money lenders accounted for as much as 71.6 percent of rural credit. The reason was that there was no other source and the farmers were forced to borrow for them. This total dependence of the farmers on the money lenders enabled the money lenders to dictate terms and exploit the farmers in a number of ways. Therefore, the government has undertaken various steps to regulate the activities of the money lenders. For this purpose various legislations were enacted. The basic objectives of these legislations were:

  - To bring about an improvement in the terms on which private credit was made available to the farmers and place legal restrictions on the unreasonable exploitations of the moneylenders
  - 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, two sets of provisions were made in this regard. The first set of provisions included: a) licensing or registration of the money lenders b) fixation of maximum rates of interest and c) maintenance of accounts by money lenders etc. The second set of provisions included the empowerment of the court by execution of decrees or to direct the payment in installment basis.

- **Institutional Sources of Agricultural Finance:** The major institutional sources of agricultural finance in our country include: the co-operatives, commercial banks, regional rural banks and the NABARD. We shall discuss the role played by the Regional Rural Banks (RRBs) and NABARD in the next section. In this section we shall discuss the role

depend to a large extent on climatic factors. The modernization of this sector (such that farmers have to depend less on climatic factors) needs financial support. The returns of investment from this sector are less compared to the returns from the industrial sector. Again, there is the difficulty in distinguishing between productive and unproductive loans of the farmers. Hence, the banks or the financial institutions did not have interest earlier in advancing loans to agriculture and allied activities for a long time. Therefore the farmers were forced to depend on money lenders and mahajans. This leads the farmers towards a debt trap, and they could not come out easily from such debt traps. Ultimately, they have to lose their lands to the money lenders. To save the farmers from such situation, it is urgently required to finance the farmers through different institutional sources, such as credit societies, commercial banks and rural banks. Governments have taken a number of steps to make institutional funds available to this sector. For example, a number of Regional Rural Banks (RRBs) were established for this purpose. Similarly, the Reserve Bank of India set up National Bank for Agriculture and Rural Development (NABARD) to help the agricultural and development activities in the rural areas of the country.

Apart from non-availability of funds, marketing of the agricultural produce at the right market price is another problem. Rural farmers often have to sell out their produce to brokers or middle men at a much less price than the actual market price. Thus, provision of the linkage between the farmers and the market is also another important issue to be tackled. This unit deliberates on the issues of agricultural finance and agricultural marketing. The need for agricultural finance, various sources of agricultural finance, role played by the co-operatives, commercial banks and regional rural banks, especially, the roles played by NABARD has been discussed in the unit. Apart from this, the meaning of agricultural marketing, its basic requirement, major limitations of agricultural marketing and the role played by the government in promoting agricultural marketing have been explained in this unit. Let's begin with the need for agricultural finance.The tenure system of the country identifies the ownership of the land and the relation of

the owner of the land with the cultivator and the government. It is concerned with the cultivator and the government. It is concerned with the rules and regulations, the terms and conditions under which the cultivator cultivates the land.

1.3 NEED FOR AGRICULTURAL FINANCE

Agricultural finance can be discussed under two major categories.

- On the basis of time, agricultural finance can be short, medium and long term.
  - ➢ Short term loans are required for the purchase of seeds, fertilizers, pesticides, feeds and fodder of live stock, marketing of agricultural produce, payment of wages of hired labor and a variety of consumption and unproductive purposes The period of such loans are less then 15 months.
  - ➢ Medium term loans are generally needed for the purchase of cattle, small agricultural implements, repair and construction of wells etc. The period of such loan or credit extends from 15 month to 5 years.
  - ➢ Long term loans are required for permanent improvements on land, digging tube wells, purchase of larger agricultural implements and machinery like tractors, harvestors etc. and repayment of old debts. The period of such loans extends beyond 5 years.
- On the basis of purpose, the needs for agricultural finance can be classified as productive, consumption needs and unproductive.
  - ➢ **Productive needs:** Under productive needs are included all credit requirements which directly affect agricultural productivity. To increase agricultural productivity farmers need loans to purchase seeds, fertilizers manures agricultural implements, livestock, digging and repair of wells and tube wells, payment of wages permanent improvements on land, marketing of agricultural produce etc.
  - ➢ **Consumption needs:** often farmers need loans for consumption purposes also. This happens in the period between marketing of agricultural produce and the harvesting of next crops, in which there

is a long interval of time and most of the farmers do not have sufficient income to sustain them through this period. Again, if natural calamities e,g. drought, flood etc. occur, the crop is damaged and the farmers have to take loans for consumption purposes.

- ➢ **Unproductive purposes:** Farmers also require loans for some unproductive purposes, such as litigation, performance of marriages, social ceremonies or 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 money lenders and mahajans.



CHECK YOUR PROGRESS

Q 1: Mr. R Majumdar, a farmer from Lakhimpur has taken a loan of Rs. 50,000 from NABARD to purchase some minor agricultural implements. He has to pay back the loan with interest within a period of 4 years. Will you consider this loan as long-term? Justify your answer. (Answer in about 60 words)

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Q 2: When and why are the loans raised for consumption purposes? (Answer in about 50 words)

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it can offer attractive and profitable opportunities to produce a variety of products.

Limitations of Agricultural Marketing : Although there are many advantages and need for agricultural marketing, limitations are also manifold. Important ones are:

- Inadequacy of warehousing facilities and possibility of products being damaged, the farmer's capacity to store the produce for a longer period is reduced. In the worst possible case, the farmers are keen on disposing it and they do not get fair price and make the best of the market opportunity. The country suffers because of the reduction in supply.
- Poor transport facilities such as poor road, rail and water transport cause farmers a lot of difficulties in carrying the produce from fields to their homes and from villages to markets. Apart from inadequate transport, the country also suffers from the shortage of fast moving vehicles. This hinders the quick movement of a large quantum of produce and perishable goods to the market. As a consequence, the cost of carriage of goods increases and a part of the produce is spoilt on the way. Farmers also fail to get a good market price for their produce.
- An inadequate facility of credit, especially to fulfil the need of credit between the harvesting period and the time it is sold out is another limitation of agricultural marketing and finance. This adversely affects the holding capacity of the farmers; more particularly, the small farmers. The farmers are forced to sell the crop immediately after harvesting. All the farmers bring their supplies together. This causes inundated supply in the market; and consequently, the farmers do not get fair prices for their produce.
- Another defect of the present marketing system is that agricultural produce of different varieties is not graded properly. Arrangements for the grading and standardization of products are not adequate. As a result, the produce that comes to the market consists of a variety of qualities and grades. This makes difficult to assign prices to these goods as per their qualities. Hence prices, production and quality of the produce bear

- Shortage of staff has led to the deterioration in the quality of landing due to heavy workload on them. The staffs in rural branches in commercial banks lack sufficient motivation to work in rural areas for various reasons. Supervision of rural advances has come to be neglected.
- Opening of a large number of branches in rural areas which do not have adequate business potential, results in the rise of establishment expenses, and increase in non-performing advances. This has affected the profitability of the banks adversely.
- The recovery position of the commercial banks is very bad.
- The credit-deposit ratio is an important indicator of the degree of involvement of banks in lending. However the rural credit ration has declined as for example; from 1.58 percent in 1991 to 0.73 percent in 2001 which shows that deposits mobilized from rural India are being utilized elsewhere. In other words, the rural India is financing the other sectors of the economy.
- The commercial banks have failed to fill the geographical gap in the availability of credit not covered by the co-operatives.
- There is lack of co-ordination between one commercial bank and another, and also between commercial banks and the co-operative credit structure on the one hand, and the government department on the other. Even the lead Bank scheme for each district is not able to cover the entire system.



CHECK YOUR PROGRESS

Q 3: What are the main sources of agricultural finance? (Answer in about 50 words)

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Q 4: State the role of co-operatives in providing agricultural credit. (Answer in about 50 words)

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Q 5: The rural India is financing the other sectors of the economy. Do you agree with this statement? Justify your view. (Answer in about 60 words)

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6.4.2 Role of Regional Rural Banks (RRBs) and NABARD

Role of the Regional Rural Banks (RRBs) : The regional rural banks came into existence since 1975 as per the recommendation of the Working Group on Rural Banks (1975) to supplement the efforts of the commercial banks and the co-operatives. Initially in 1975, 5 RRBs were formed. These banks were formed as joint ventures of the Central Government, the State Government in which the bank operated and the concerned commercial bank which sponsored the RRB. The Central Government provided 50% of the total capital; the concerned State Government provided 15%, while the remaining share of 35% was provided by the sponsoring bank.

The objectives of establishment of RRBs are :

- To extend credit to weaker sections of the rural community, small and marginal farmers, landless labours, artisans and other residents of small means.
- To be an institutional device in consonance with the cooperatives and commercial banks with modern outlook and to reach out the rural poor more extensively.
- To act as low cost, low profile credit institution which the rural

Q 8: Why and to whom are the long term loans offered by NABARD. (Answer in about 30 words)

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6.5 AGRICULTURAL MARKETING : CONCEPTS AND LIMITATIONS

The Concept of Agricultural Marketing : The marketing of agricultural produce involves several activities such as collecting and storage of agricultural produce, their gradation, settlement of bargains of prices and quantities etc. In facilitating the sale and purchase of agricultural products, an effective agricultural marketing system provides a number of valuable services to an economy. These include:

- A proper marketing system is essential for healthy functioning of an economy. The existence of a good marketing system is an assurance to the farmer that his produce will be taken off the field. Such a system will indicate to the farmers the type of goods for which demand exists and the quantities in which these goods are needed. This will help in an optimum use of land.
- A well designed marketing set-up will help the farmers immensely in the sense that they will get the highest possible price for their produce. They will be induced to produce those goods and in that quantities, which bring to them the maximum revenue.
- A good marketing system properly aligns the agricultural prices with those of non agricultural prices which is the major contributor of GDP of the Indian economy as a proper marketing arrangement can organize surpluses from this sector and these are required to be used in the non-agricultural sector, e.g., to feed the industrial labor and urban population. This can provide raw materials for industries and goods for exports.
- Agricultural marketing can be designed in such a way that it helps in maximising the rate of growth of the agricultural sector. In this framework,

providing revolving cash credit facilities. NABARD has accelerated the pace of some of KCCS.

- NABARD has issued operational instructions to RRBs and co-operative banks with regard to implementation of Swarnajayanti Gram Swarozgar Yojna (SGSY) on similar line as was issued by the Reserve Bank for commercial banks. Policy guidelines for refinance support to SGSY were also issued to all financing banks.
- NABARD set up the co-operative Development Fund (CDF) in 1993 with the objective of strengthening the co-operative credit institutions in the area of organizational structure, human resource development, resource mobilization, recovery position etc. The assistance is provided to state co-operative banks, state co-operative agriculture and rural development banks, by way of a grant of a soft loan or both.
- NABARD is the supervisory authority for state co-operative Banks, and certain other state level co-operative institutions. Accordingly, NABARD undertakes periodic on-site and off site inspection of these organizations.
- The three main functions of NABARD are refinancing, institutional development and inspection of client banks.



CHECK YOUR PROGRESS

Q 6: When and how were the RRBs formed? (Answer in about 50 words)

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Q 7: NABARD was set up by the SBI and Govt. of India. (True / False)

poor could walk in.

- The staff of the RRBs was to be recruited from the neighboring areas, such that they have better understanding of the needs of the area and its people.

Growth of RRBs : From the initial number of 5 in 1975, 196 RRBs were set up by 1990 across India. In 2005-06, RRBs provided Rs.15,223 crore as agricultural credit. This was 8.5% of the total institutional credit to the sector in that year. Keeping in view the limited success, Government of India in September 2005 initiated the process of amalgamation of the RRBs. The main argument put forward was that such amalgamation would help in consolidation and strengthening of the RRBs. Till August 2006, such amalgamation have reduced the number of RRBs from 196 to 104 which further declined to 95 in 2007.

Weaknesses : In spite of the growth, the RRBs failed to record impressive results. The main problems faced by the RRBs are:

- There is a multi agency control of RRBs. This contributed to a lack of uniformity in their functioning. It has resulted in lack of support from state governments and lack of proper monitoring by sponsoring banks.
- Recovery position of RRBs is very bad; thus, its overdues are very high. The high incidence of overdues is attributable to a number of internal as well as external factors like defective loan policies, weak monitoring and supervision, failure to link lending with development and to ensure proper end use of the loan are some of the internal factors. External factors included political interference, willful default, bad effects of draughts and floods on agriculture, lack of legal and administrative support from the state government in the matter of loan recovery etc.
- The RRBs are so structured as to confine their lending to weaker sections, where the interest earned as loans is the lowest in the banking system. Low margins coupled with high cost of servicing in a large number of small accounts added to the losses. Again,

opening of RRB branches year after year added to increased overhead costs, without proportionate increase in income. All these factors led to mounting losses, ultimately leading to non-viability in operation.

- Since the RRBs are district level small institution, the sponsoring banks have been deputing only middle management staff to run them. Such staff finds it difficult to take independent decisions in a new environment.

Role of National Bank for Agriculture and Rural Development (NABARD) : The most important development in the field of rural agricultural 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 it performed in the field of rural and agricultural credit.

NABARD was set up with an authorized capital of Rs.500 crore and paid up capital of Rs.100 crore. The share of the Government of India and the RBI is equal, i.e., 50:50. In 1999-2000, the paid up capital was raised to Rs.2000 crore. NABARD also receives funds from the World Bank and the International Development Agency (IDA).

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

- To serve as an apex financing agency for the institutions providing investment and production credit for promoting various developmental activities in rural areas.
- To co-ordinate the rural financing activities of all institutions engaged in developmental works at the field level and liaison with the government of India, the State Governments, the Reserve Bank of India and other national level institutions concerned with policy formulation.
- To undertake monitoring and evaluation of projects refinanced by it.
- To take measures towards institution building for improving

absorptive capacity of credit delivery system including monitoring, restricting of credit institutions and training of personnel.

NABARD'S role in the agriculture sector: The roles played by the NABARD in the agricultural sector are as follows:

- NABARD provides short term credit facilities to state co-operative bank for financing seasonal agricultural operations marketing of crops pisciculture activities, production, procurement and marketing activities of the co-operative weaver's societies purchase and sale of yarn by apex regional societies, purchase and distribution of fertilizers and allied activities and marketing activities.
- Medium term facilities are provided to state co-operative banks and Regional Rural Banks for converting short term loans for financing seasonal agricultural operations to medium term loans and for approved agricultural purposes.
- Long term loans are provided to state government for contributing to share capital of co-operative credit institutions.
- NABARD refinances to state co-operative agriculture and rural development banks, state co-operative bank, regional rural banks, commercial banks and other financial institutions approved by the Reserve bank while ultimate beneficiaries of investment credit can be individuals' partnership concerns, companies, state owned corporation or co-operative societies. Production credit is generally provided to the individuals.
- NABARD has played a key role in the development and promotion of Self Help Groups (SHGs) and other micro finance institutions and in providing refinance at special rates. SHG-bank linkage programme has emerged as a major micro-finance initiative to reach out the doorsteps of millions of very poor household.
- The Kissan Credit Cards (KCC) scheme was introduced in 1998-99 to facilitate short term credit to farmer, commercial bank, co-operative banks and RRBs are implementing this scheme. Each farmer is provided with a Kissan credit card and a pass book for

of the total capital; the concerned State Government provided 15%, while the remaining share of 35% was provided by the sponsoring bank.

Ans to Q No 7: False.

Ans to Q No 8: NABARD offers long term loans to the state governments. The basic purpose of such loans is to enable the state governments to contribute to the share capital of co-operative credit institutions of the state.

Ans to Q No 9: Agricultural marketing involves several activities such as collecting and storage of agricultural produce, their gradation, settlement of bargains of prices and quantities etc. In facilitating the sale and purchase of agricultural products, an effective agricultural marketing system provides a number of valuable services to an economy.

Ans to Q No 10: Poor transport facilities such as poor road, rail and water transport cause farmers a lot of difficulties in carrying the produce from fields to their homes and from villages to markets. As a consequence, the cost of carriage of goods increases and a part of the produce is spoilt on the way. Farmers also fail to get a good market price for their produce.

Ans to Q No 11: Owing to lack of storage facilities, the farmers are forced to sell the crop immediately after harvesting. All the farmers bring their supplies together. This causes inundated supply in the market; and consequently, the farmers do not get fair prices for their produce.

Ans to Q No 12: c) The Rural Credit Survey Committee

Ans to Q No 13: The Directorate of Marketing and Inspections was set up by the Govt. of India to co-ordinate the agricultural marketing activities of various agencies and to advise the central and state governments on the problems of agricultural marketing. Two important functions performed by the directorate are: a) promotion of grading and standardization of agricultural and allied commodities, and b) market research, survey and planning.

Ans to Q No 14: a) AGMARK : Agricultural Marketing.

b) PDS: Public Distribution System.

no relation to one another. As such, farmers find it difficult to secure higher prices for their superior quality products. Thus, the producers do not get incentive for their quality production; on the other hand, the consumers as well do not get satisfaction from such transactions.

- Very often farmers are not supplied with correct information about market price, demand, international trends, Government policies etc. As a result, farmers visit markets occasionally and base their decisions on the information supplied by money lenders, traders, other functionaries and intermediaries. Such information is generally wrong and biased in favor of purchasers and against the interest of the farmer.
- Another weakness of agricultural marketing is that arrangements for institutional marketing are grossly inadequate. The farmers sell their produce separately on individual basis. Against the powerful intermediaries, these farmers possess only very weak bargaining capacity. Consequently, they do not get fair price for their produce. Due to having small number of co-operative marketing societies and inadequate government arrangements to buy agricultural produce, only a few regulated markets are found functioning properly. As a consequence of such deficiencies, farmers are being exploited.



CHECK YOUR PROGRESS

Q 9: What is agricultural marketing? (Answer in about 50 words)

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Q 10: How do the transport facilities affect the marketing of agricultural produce? (Answer in about 40 words)

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Q 11: What happens when all the farmers bring their produce for sale in the market just after harvesting? (Answer in about 50 words)

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6.6 ROLE OF GOVERNMENT IN PROMOTING AGRICULTURAL MARKETING

After independence, the Government of India adopted a number of measures to improve the system of agricultural marketing. These are: establishment of regulated markets, construction of warehouses, provision for grading and standardisation of agricultural produce, standardization of weights and measures, daily broadcasting of market prices of agricultural crops on all India Radio, improvement of transport facilities etc. Now, we shall discuss them in brief.

- Regulated markets have been organized with a view to protect the farmers from the malpractices of sellers and brokers. The management of such markets is done by a marketing committee, consisting of nominees from the state government, local bodies, brokers and farmers. The functions performed by the committee are: a) fixation of charges for weighing, brokerage etc., b) prevention of unauthorized deductions by intermediaries, c) enforcing the standardized weight, d) providing up-to-date and reliable market information to the farmers and e) settlement of disputes among the parties arising out of market operations.
- For the improvement of agricultural marketing, gradation and standardization are essential. To address these issues, government passed the Agricultural Produce (Grading and Marketing) Act. This provision presently covers 182 agricultural commodities. Again, the government has also set up a central quality control laboratory at Nagpur

implements can not be termed as long term loans. This is because, long term loans are offered for a period of 5 years or more. Again, such loans are offered to for permanent improvement on land, digging tube wells, purchase of larger agricultural implements and machinery like tractors, harvestors etc. and repayment of old debts, etc.

Ans to Q No 2: Loans for consumption purposes are raised to meet the need for credit during the period between marketing of agricultural produce and the harvesting of next crops. Again, if natural calamities e,g. drought, flood etc. occur, the crop is damaged and the farmers have to take loans for consumption purposes.

Ans to Q No 3: Sources of agricultural finance can be divided into two categories: non-institutional and institutional sources. The non-institutional sources are: a) moneylenders, b) relatives c) traders d) Commission agents and e) Landlords. On the other hand, institutional Sources of Agricultural Finance include: the co-operatives, commercial banks, regional rural banks and the NABARD.

Ans to Q No 4: After independence, the first institutions established and promoted to offer agricultural credit were the institutions of co-operative credit societies. In 1951 co-operatives provided only 3.1 percent of the total rural credit. In 1992-93, the rural credit provided by the co-operatives was 53.4 percent. However, thereafter, though the amount of rural credit provided by the co-operative increased, their percentage of share in total institutional credit declined.

Ans to Q No 5: It is rightly said that the rural India is financing the other sectors of the economy. This can be substantiated from that the fact the rural credit-deposit ratio has declined over the years. The ratio which was 1.58 percent in 1991 has declined to 0.73 percent in 2001. This clearly shows that deposits mobilized from rural India are being utilized else were.

Ans to Q No 6: The regional rural banks were formed in 1975. These banks were formed as joint ventures of the Central Government, the State Government in which the bank operated and the concerned commercial bank which sponsored the RRB. The Central Government provided 50%

- As the apex institution, NABARD plays the supervisory role in the developmental refinancing functional operations in rural and agricultural credit.
- Agricultural marketing is the marketing of agricultural produce which involves collecting and storage of agricultural goods, their gradation, settlement of bargaining etc.
- The requirement of agricultural marketing is manifold. It covers prices, optimum use of land, demand for goods in the market, aligning prices of agriculture to non-agricultural commodities, market set up, growth of agricultural sector etc.
- There are many limitations or weakness in agricultural marketing. These include: inadequate transport, storage facilities, non gradation of agricultural goods, lack of credit facilities, non- availability of market information, non-existent of institutional market, malpractices in the marketing of agricultural goods etc.
- The government has taken a number of measures to improve agricultural marketing in the country. For example, establishment of regulated market, construction of warehouses, provision of grading and standardization of agricultural produce, standardization of weights and measure, dissemination of market information through print and electronic media etc.

6.8 FURTHER READING

1) Agrawal, A. N. (2019). Indian Economy: Developmental Problems and Policies. New Delhi: New Age International Publishers.
2) Datt, G and Mahajan, A. (2016). Datt & Sundharam's Indian Economy. New Delhi: S. Chand & Co.
3) Misra, S.K. & Puri, V.K. (2018). Indian Economy. New Delhi: Himalya Publishing House.

6.9 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: Majumdar's loan for the purchase of minor agricultural

and a number of regional subsidiary quality control laboratories. On the basis of samples, agricultural commodities are collected and chemical properties are tested at laboratories. Thereafter, grades are drawn up and authorized AGMARK (Agricultural marketing) packets are issued for these commodities.

- The Union Government adopted the Metric system of measures in 1958, by passing an act to this effect in the Parliament. This system replaced the age old system of weights and measures and has introduced a uniform system of measurement in the country.
- It is necessary to provide a network of godown facilities all over the country, so that farmers are not compelled to sell their produce immediately after the harvesting of crops. This will enhance the bargaining power of the farmers and save them from distress sale. To meet this objective, the Rural Credit Survey Committee constituted in 1954 recommended a three tier system of warehousing, viz., a) The national level b) state and district level and c) village and rural level. In accordance with the recommendations, Central Warehousing Corporation was set up in 1957 and this was followed by establishment of state warehousing corporations in a number of states. At the national level, Food Corporation of India (FCI) was set up for the storage of food products. To prevent distress sales, a centrally sponsored scheme for rural godowns was initiated at the village and rural level; so that the small and marginal farmers need not to do so just after the harvesting of the produce at the prevailing low price. After 2001, the government is implementing a central sector scheme for the construction of rural godowns.
- The government 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 recommendation of the commission for Agricultural costs and prices. Government agencies like the Food Corporation of India purchase agricultural commodities from the farmers at the remunerative prices. These purchases in turn are sold of by the government at reasonable

prices through the Public Distribution System (PDS) to the ultimate consumers, especially the below poverty line (BPL) families.

- The government has initiated a number of measures to inform the farmers about the prices prevailing in different markets, e.g., through all India Radio, Doordarshan, news papers etc. Market intelligence reports regarding stocks, current market prices etc are also published periodically. Under a central scheme, a market research and information network has been constituted for speedy collection and dissemination of prices and market related information to farmers.
- The National Institute of Agricultural Marketing was established in 1988. The main aims and objectives of the Institute are: a) to design and conduct training courses to meet the specific needs of the personnel and enterprises, b) to undertake research studies to demonstrate better management techniques in the field of agricultural marketing, c) to offer educational programmer in agricultural marketing for supplementing the existing facilities, d) to provide consultancy services for formulating investment projects and for problem solving advise, and e) to augment the agricultural marketing infrastructure of the country through programmes of teaching, research and consultancy services.
- The Directorate of Marketing and Inspections has been set up by the Govt. of India to co-ordinate the agricultural marketing activities of various agencies and to advise the central and state governments on the problems of agricultural marketing. The activities to be performed by the directorate are: a) promotion of grading and standardization of agricultural and allied commodities, b) statutory regulation of markets and market practices, c) training of personnel, d) market extension, and e) market research, survey and planning.



CHECK YOUR PROGRESS

Q 12: Which of the following recommended a three tier system of warehousing?

a) Agricultural Produce (Grading and Marketing) Act

b) Food Corporation of India

c) The Rural Credit Survey Committee

d) Directorate of Marketing and Inspections

Q 13: Why was the Directorate of Marketing and Inspections set up by the Govt. of India? Mention any of its two functions. (Answer in about 60 words)

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Q 14: Expand the following terms.

a) AGMARK:.....

b) PDS:.....

c) FCI:.....

d) BPL:.....



6.7 LET US SUM UP

- To help the farmers and to increase agricultural productivity in the country, institutional credit is provided by co-operatives, commercial banks, RRBs, NABARD etc. and is treated as agricultural finance.
- The need for agricultural finance is manifold. For example, agricultural finance is needed for production, consumption and even for unproductive purposes.
- Sources of agricultural finance are of two types: a) institutional and b) non-institutional. Sources of Non-institutional are money lenders, relatives, traders, commission agents and landlords. The institutional sources are co-operatives, commercial banks, regional rural banks and NABARD. Out of these, NABARD is the apex institution.
- The role of co-operatives, commercial banks and Regional Rural Banks in providing rural agricultural credit is tremendous, though each of them has some limitations.

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7.4 PUBLIC DISTRIBUTION SYSTEM

As stated earlier PDS is the largest food based safety net introduced by the Government of India. The basic objective of PDS in India is to provide essential consumer goods to the consumers at cheaper and subsidized prices so that they are able to maintain the minimum standard of food security and nutrition status. The major items distributed under the network of PDS in India have been rice, wheat or Atta, sugar and kerosene. The Food Corporation of India (FCI), established in 1965, is the major agency to run the network of PDS. FCI procures foodgrains from the farmers or producers at Minimum Support Price (MSP).

MSP is fixed by the Govt. of India(before crop sowing) to protect the producers or farmers against excessive fall in price during bumper production years. It is a support to the farmers and producers that their product would be definitely sold out without loss. FCI maintains the ***buffer stock*** of the procured foodgrains at their warehouses. It is the central Issue Price(CPI) at which FCI allocate these food grains to the state governments. State governments hold the responsibility for distributing the same to the consumers through the established network of regulated ration shops or Fair Price Shops (FPSs). State governments are also responsible for operational responsibilities including allocation and identification of families below poverty line, issue of ration cards, supervision and monitoring the functioning of FPSs.

Buffer Stock is the stock of foodgrains, namely wheat and rice procured by the government through FCI.

The PDS was a general entitlement scheme till 1992. In June 1992, the Revamped Public Distribution System (RPDS) was launched to strengthen the PDS by emphasizing poorer section of the society living in hilly, remote and inaccessible areas. Special focus was given to the poorer section of the society with coordination of state governments. Area specific programmes were initiated like Drought Prone Area Programme (DPAP),

c) FCI: Food Corporation of India.

d) BPL: Below Poverty Line.

6.10 MODEL QUESTIONS

Short Questions (Answer each question in about 150 words)

Q 1: State the role of NABARD in providing rural agricultural credit.

Q 2: Discuss the main functions of NABARD.

Q 3: Write a short note on the role Regional Rural Banks in providing rural agricultural credit.

Q 4: Briefly discuss agricultural marketing. What are the problems cropped up in the agricultural marketing?

Essay type Questions (Answer each question in about 500 words).

Q 1: Discuss the sources of agricultural finance. Enumerate the role of NABARD in providing rural agricultural credit.

Q 2: Write an essay on the roles of Regional Rural Banks and NABARD in providing rural agricultural credit.

Q 3: What is agricultural marketing? What are its major problems? Explain the measures adopted by the government to solve the problems of agricultural marketing.

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UNIT 7: FOOD SECURITY AND PUBLIC DISTRIBUTION SYSTEM IN INDIA

UNIT STRUCTURE

7.1 Learning Objectives

7.2 Introduction

7.3 Concept of Food Security

7.3.1 Prevalance of Malnutrition and Hunger

7.3.2 Dimensions of Food Security

7.4 Public Distribution System (PDS)

7.5 Food Security Act, 2013

7.6 Impact of PDS on Poverty

7.6.1 Food Subsidy under PDS

7.6.2 Incentive to the Farmers through Minimum Suport Price

7.7 Limitations of PDS

7.8 Suggestive Measures

7.9 Let Us Sum Up

7.10 Further Reading

7.11 Answers to Check Your Progress

7.12 Model Questions

7.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- derive the meaning and concept of food security
- analyse the status and severity of food insecurity, malnutrition and hunger in India
- discuss the working of the largest food safety net.i.e. Public Distribution System (PDS).
- comprehend on the drawbacks and failure of PDS and to find out dynamic strategies for wider coverage and implementation of PDS and
- discuss the recently announced largest PDS reform- NFSA, 2013 and its features that aims to reduce poverty and hunger and to ensure

economic and cyclical fluctuations like price rise. Stable supply and accessibility of nutritious food controls seasonal hunger and malnutrition. The problem of food security has quantitative as well as qualitative aspects. Availability and accessibility of adequate amount of nutritious food is essential to maintain a desired food security level. To tackle both qualitative and quantitative aspects, the Government of India has relied on the following three food based safety nets:

a. Public Distribution System (PDS)

b. Integrated Child Development Services (ICDS) and

c. Mid -Day Meals(MDM) Programme

PDS is the largest network initiated by the government and have remarkable impact on poverty although lot of debates going on over the years. Moreover, the employment generation programmes has been initiated by the Government of India to increase the purchasing power of the individuals .



CHECK YOUR PROGRESS

Q 1: State whether the following statements are True (T) or False (F)

i) Food Security is a basic human right. .

ii) Food security can be achieved without nutrition security.

iii) Green Revolution is an initiative to increase agricultural production.

Q 2: Who are mainly Food Insecure? (Answer in about 40 words).

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Q 3: Differentiate Seasonal hunger and Chronic Hunger. (Answer in about 50 words)

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China with 1.21 billion population (Census, 2011). There is need of more comprehensive strategy and agricultural research to increase quality and quantity of diversified agricultural food so that growing demand can be fulfilled.

- **Food Access:** Another most important dimension of food security is accessibility of food i.e. the purchasing power of the individuals for nutritious food. The income of the individual or the household must be enough to purchase adequate amount of nutritious food. Employment and income generation increases the purchasing power of the individuals. Social and economic empowerment of women is also important for their nutrition and health status as well as of other family members. Economic empowerment of women leads to income generation and thereby increases purchasing power and helps to reduce malnutrition of the children and the family.
- **Utilisation:** Along with adequate quantity and quality of food items, some non-food components like clean drinking water, proper sanitation and health care practices are essential to reach a secured food and nutrition level. Proper utilisation of clean drinking water and sanitation reduces health risk of common diseases like diarrhea, cholera, malaria, fluorosis, arsenicosis , trachoma, intestinal worms, typhoid etc. Better health care practices like exclusive breastfeeding up to six month, timely introduction of complementary foods, minimum dietary diversity, consumption of iron rich complementary foods, Vitamin A supplementation, full vaccination and safe disposal of stool of the child etc. are essential for better utilisation of nutrition intervention.
- **Stability:** All time availability and accessibility of adequate nutritious food is another most important dimension food security. It requires stable food supply and accessibility by the individual and households. There should not be seasonal food insecurity due to natural calamities like flood, drought, earthquake and

basic right of food for all people for a decent life.

7.2 INTRODUCTION

Indian economy is characterized as a developing economy. Poverty among the people is a basic characteristic of the economy. Eradication of extreme poverty and hunger is a major challenge facing by the Indian economy as well as the global economy. As per estimate of Global Food Security Index, 2016(GFSI,2016) globally 800 million people -just over one in nine people -remain hungry . One third of world's hungry live in India and every year Indians have to die of hunger. The poor and vulnerable groups are unable to consume required meal for nutrious diet and productive life which is a basic need for survival. These group of people remain food insecure and unable to lead an active life . In this unit we will discuss the multidimensional and complex problem of food security and the system (i.e. Public Distribution System) that Government follows to ensure food security to the people.

7.3 CONCEPT OF FOOD SECURITY

Consumption of enough healthy food is a basic human right. When an individual or group of individuals are unable to consume basic foods for energy and nutrients to maintain a healthy and productive life then they are termed as food insecure. The most acceptable definition of food security was given by World Food Summit of Food and Agricultural Organization (FAO) held in 1996. FAO states "Food Security exist when all people, at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preference for a healthy and active life " . The group of people who are mainly food insecure belongs to people employed in ill-paid occupations, casual labourers, landless people, petty self-employed, workers and destitute including beggars, the people affected by natural disasters and most importantly the Women and Children.

7.3.1 Prevalence of Malnutrition and Hunger

Hunger and food insecurity affects the living condition of the people by destroying their physical and mental health. Food security cannot be achieved without nutrition security. In general the most widely used indicator of nutrition is dietary energy orintake of calorie per person per day. The National Sample Survey (NSS) use 2700 kcal as standard norm of calorie intake per person per day to be food secure. During 66th round NSS, average dietary energy intake per person per day was 2147 kcal for rural India and 2123 Kcal for urban India, indicates the existence of rural and urban food insecurity in the country.

Food Insecurity results undernourishment and malnutrition among the people. The number of undernourished people is highest in India.

According to FAO estimates in "The State of Food Insecurity in the world ,2015" report 15.2% of Indian population is undernourished and 194.6 million people go hungry every day. The problem is more severe among women and children. 48% of women between 15 to 49 years of age are anemic whose Body Mass Index(BMI) is less than 18.5. The low health status of women have detrimental effect on child health status. It results low birth weight(<2.5kg) to the child. Low birth weight hampers the proper physical and mental growth of the children and thereby their overall cognitive development.

Some important points regarding India's status in Global Hunger Index, 2016

- 30.7% of children under 5 years of age are underweight
- 38.7% of children under 5 years of age are stunted (low height for age)
- 1 in 4 children are malnourished
- 3000 children in India die every day from poor diet related illness.

Malnutrition arises due to lack of essential nutrients such as proteins, vitamins, in the food

Undernourished peoples are those who gets less than the minimum amount of the foods (2500 calories/ day) essential for sound health and growth.



LET US KNOW

Chronic Hunger: Inadequate diet for longer time

Seasonal Hunger: When a person unable to get food entire year .

If such calamity happens in a very wide spread area or is stretched over a longer time period, it may cause a situation of starvation.

A massive starvation might take a turn of famine. For example the Bengal famine of 1943-44 was a major famine in the Bengal province in British India during world war II, claiming the lives of at least three and half million people.

7.3.2 Dimensions of Food Security

The prevailing situation of malnutrition and hunger indicates that India is in serious condition of food security. With increasing demand for growing population the problem will become more serious in near future. It is, therefore, necessary to analyse properly the different dimensions of food security so that effective policy can be adopted. Broadly speaking there are four dimensions of food security.

- **Food Availability:** The availability of enough quality food is the key component of food security. It may be through domestic agricultural production or through import. In 1960 India adopted Green Revolution (see unit 4 for details as an initiative to increase agricultural production and to become self sufficient. Use of High Yielding Variety (HYV) seeds, irrigation, fertiliser and modern technology has increased production of agricultural output, specially wheat and rice. However green revolution results increase agricultural productivity of the states like Punjab, Haryana, Western Uttar Pradesh, Tamil Nadu and Andhra Pradesh. Some states like Bihar, Orissa and North Eastern states were not able to enjoy the benefits of green revolution. As we know India is the second populace country of the world, just after

their incentives to buy from fair price shops. The average consumption of PDS grain at the all India level is very low. It also declines the profit of the fair price shop owner and creates a question of viability of fair price shops.

7.8 SUGGESTIVE MEASURES

There are lots of structural and implementation problem of PDS, but still it remains the best form of food security for the poor. To make the system more vibrant and effective and for full realization of its potentials, the PDS need reform. Some important reform measures are as follows.

- Identification of beneficiaries should be taken considering "exclusion approach". Instead of identifying the poor, it would be effective to identify the rich who are kept out and the rest are covered. It will increase coverage under rural areas.
- The error of inclusion of non-poor in PDS can be minimized by providing entitlements through employment generation programmes like Jawahauar Rozgar Yojana (JRY) or Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA).
- The state government should issue food stamps or coupons to the Panchayati Raj Institutions (PRIs) so that they can distribute then to the poor. This would reduce the problem of diversion and leakages.
- Proper estimation of buffer stock requirements and storage capacity of the warehouses is essential to minimize and control the wastage of foodgrains that are to be allocated under PDS.
- Efficient management and regular monitoring can improve the functioning of the fair price shops removing inefficiency and corruption.

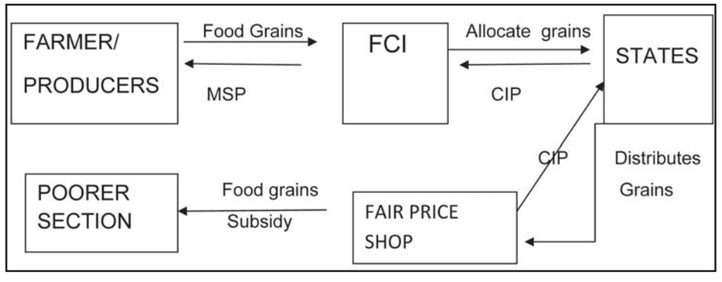


7.9 LET US SUM UP

- The government of India has been different measures to ensure the basic right of food security to the people.
- The PDS having lots of drawbacks are unable to ensure food security to the poor.

Integrated Tribal Development Projects (ITDP), Desert Development Programme (DDP) and Programme for certain Designated Hill Areas (DHA).

Figure 7.1: Working of PDS



After five years of RPDS, in June 1997, the Government of India introduced the Targeted Public Distribution System (TPDS) with a view to identify the poor people and to distribute food items in a transparent and accountable manner at the fair price shop level. The beneficiaries categorised as: (a) Below Poverty Line (BPL), and (b) Above Poverty Line (APL).

It is the responsibility of the state government to identify the poor beneficiaries (people falling in BPL category) with the help of Gram Panchayats and Gram Sabha in rural areas and Nagar Palikas in urban areas.

The reforming of PDS was not able to remove the problem of poverty and hunger in the country as the poorest of the poor section of the society sleeps without two square meals a day. In order to make TPDS more focused and targeted towards this section of the society, the Antyodaya Anna Yojana (AAY) was launched in December 2000. The identified Antyodaya families are entitled to 35 kg of rice of food grain per family per month from 1st April 2002.



CHECK YOUR PROGRESS

Q 4: Why was FCI established? When it was established? (Answer in about 30 words)

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Q 5: Define MSP and CIP. (Answer in about 40 words)

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Q 6: What are the different types of ration cards issued under PDS? (Answer in about 30 words)

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7.5 FOOD SECURITY ACT, 2013

As a reform measure of the PDS and to ensure fundamental right of food and nutrition security ,the National Advisory Council (NAC) submitted its proposals on Draft National Food Security Bill in January-February 2011 and it was signed in to a law on September 12,2013. The National Food Security Act (NFSA),2013 aims to "To provide for food and nutritional security in human life cycle approach, by ensuring access to adequate quantity of quality food at affordable prices to people to live a life with dignity". The salient features of NFSA,2013 are as follows -

- **Coverage and Entitlement:** The Act aims to cover up to 70% of the rural population and 50% of the urban population. Under TPDS, the household will be entitled with 5kg of rice, wheat and coarse grain at Rs. 3,Rs.2 and Rs. 1 respectively per person per month. However, the entitlement of existing AAY households will be protected at 35 kg per household per month. The beneficiaries will be identified by States/UTs based on the criterion set by the central government.
- **Revision of Subsidised Prices:** The price of food grains Under TPDS will remain same for the initial three years of commencement of the Act. Thereafter, the central government will change these prices in relation to Minimum Support Price(MSP).

hand, increasing MSP and storage cost results higher economic cost. The result is the hike in food subsidy and severe fiscal burden on the government.

- **MSP and Cropping Pattern:** Increasing MSP, on the one hand, leads to a burden on the government and on the other hand distorts the cropping pattern of the country. The farmers are more inclined to cultivate rice and wheat due to its increasing MSP. However, the consumption pattern has been changing towards non cereal foods, but no such corresponding growth in production. As a result there is demand supply mismatch and increased market price and higher cost of living of the people.
- **Problem of Identification:** The identification of BPL and APL families are based on income level of the households which is quite difficult to estimate in actual rate due to irregularity of income of the people working in informal and unorganized sectors. The deserving households most of the time excluded and it creates high exclusion errors. Moreover it becomes difficult to distinguish between BPL and AAY families and arise systematic inclusion error. Inclusion of non-poor with PDS ration card creates high inclusion error.

  The process of identification of APL and BPL families are carried out by Gram Panchayats and Gram Sabha. Political pressure and corruption of Gram Panchayats and Gram Sabha aggravates the problem of exclusion and inclusion error. Thus given the problem of conceptual as well as at operational level vulnerable population are unable to grab the benefits of PDS.
- **Malpractices by PDS Dealer:** The malpractices on the part of PDS dealers like diverting the grains to open market to get better margin, selling poor quality grains at ration shops, irregular opening of the shops etc. deteriorating the effective implementation of PDS and thereby unable to solve the problem of food and nutrition security in the country.
- **Lower Incentive to purchase to from PDS Shops:** The price differential between issue prices for APL families and the open market prices had considerably narrowed down. The low income families just above APL have to pay almost equal to open market rates. It lowers

7.7 LIMITATIONS OF PDS

The PDS as a largest food safety net has not been able to attain its objective of eradicating poverty and hunger in the country. The problem of hunger still exist in many areas of India.

- **Unscientific Storage and Wastage:** There are three storage agencies-FCI, Central Warehousing Corporation and State warehousing Corporations. The storage capacity could be either owned by these agencies or be hired from private owners. The grain is stored either in covered godowns, or silos or in uncovered godowns called covered and plinth (CAP). The storage capacity here is the grand total storage capacity of all the three agencies-hired/owned and covered/CAP. Storage capacity with FCI is largest and it is increasing reasonably. But capacity under covered and plinth is increasing faster than covered ones. CAP is unscientific and results quality deterioration, pilferage and theft at substantially higher rate.
- **Insufficient Storage:** The storage capacity of PDS foodgrains is insufficient also. There is a wide gap between the required and existing storage capacity. The 11th five year plan has identified a gap of 16mt of storage capacity of foodgrains that needed to be created.
- **Excess Buffer Stock:** Under 'open ended procurement' government can't decide quantity it wants to buy. How much ever grains are offered by farmers to government, has to purchase. It results excess stocks than buffer norms which is always undesirable and wasteful. The storage of massive food stock has been responsible for high carrying costs, in addition to wastage and deterioration in grain quality. It also creates shortage of foodgrains in open market and food inflation.
- **Burden of Food Subsidy:** Ever increasing subsidy in PDS foodgrains has put a severe fiscal burden on the government. From Rs.650 crore in 1980-81 ,food subsidy rose to Rs.1,35,173 crore in 2016-17 and further to Rs. 1,45,338 crore in 2017-18. Food subsidy is the difference between the issue price and economic cost. The government has been reducing issue price to supply cheapest food grains to the poor. On the other

- **Nutritional Support to Women and Children:** The NFSA,2013 aims to support health and Nutritional status of women and children through the enhancement of Integrated Child Development Scheme (ICDS) and Mid Day Meal(MDM) Scheme. The local Anganwadi will take the responsibility to provide free meal to the children in the age group of 6 months to 6 years. The students up to class VIII are entitling to free mid -day meal in the government schools. Pregnant and lactating mothers are entitling to free meal at the local Anganwadi during pregnancy and up to 6 months after child birth. They will also be entitled to receive maternity benefit of not less than Rs. 6000.
- **Women Empowerment:** To serve the purpose of women empowerment the Act decides to issue ration card to the eldest woman of the household of age 18 years or above considering her as the head of the household.
- **Grievance Redress Mechanism:** Any grievances regarding the implementation and corruption or manipulation of the Act can be put at the Grievance Redress Mechanism at the District and State levels. States will have the flexibility to use the existing machinery or set up separate mechanism.
- **Transportation cost assistance to States:** Central Government will provide assistance to States in meeting the expenditure incurred by them on transportation of foodgrains within the State, its handling and FPS dealers' margin as per norms to be devised for this purpose.
- **Food Security Allowance:** The concerned state government has to made provision for food security allowance to entitled beneficiaries in case of non-supply of entitled foodgrains or meals.
- **Provision of State Food Commission:** The State Food Commission will monitor and evaluate the implementation of the Act, give advice to the state governments and their agencies and enquire in to violation of entitlements.
- **Penalty:** The State Food Commission will impose penalty on public servant or authority in case of failure to comply with the relief recommended by the District Grievance Redress Officer.

The NFSA,2013 is an important step towards the right to food and to bring it within the framework of legally mandated entitlements.

7.6 IMPACT OF PDS ON POVERTY

7.6.1 Food Subsidy under PDS

The main objective of PDS is to provide essential consumer goods such as rice, wheat, sugar, edible oil and Kerosene at subsidized prices and thereby to maintain a secured food security level. It is an instrument of price stabilization and acts as a force against the exploitation of traders or retailers to acquire more profit through artificial food shortage.

There has been a continuous increase in public expenditure of the government on PDS. In 2016-17 budget, food and public distribution accounts 7.1% of total expenditure of the government. The food subsidy component of central government rose from Rs.650 crores in 1980-81 (at current prices) to Rs. 1,34,834.61 crore in 2016-17 (Table 7.1).

Table 7.1: Central Government Expenditure on Food Subsidy

Year	Expenditure (Rs. Corers) at current prices	Year	Expenditure (Rs. Corers) at current prices
1980-81	650	2010-11	63,844
1990-91	2450	2011-12	72,822
2000-01	12,010	2012-13	85,000
2004-05	25,746	2013-14	92,000
2005-06	23,071	2014-15	1,22,675
2006-07	23,828	2015-16	1,24,4119
2007-08	31,259	2016-17	1,34,834
2008-09	43,668	2017-18	1,45,338
2009-10	58,242	2010-11	63,844
2010-11	63,844	2011-12	72,822

Source: Datt, G. & Mahajan, A. (2016). *Datt and Sundharam's Indian Economy.* Union Budget 2016-17 and 2017-18

Under NFSA, the component of food subsidy is expected to be higher as the government aims to provide subsidized food grains to cover 80 crore people from November, 2016.

7.6.2 Incentive to the Farmers through Minimum Support Price

The poor farmers productions are protected by the government at the beginning of the sowing season by providing minimum support price (MSP) to their produce on the basis of the recommendations of the commission for Agricultural Costs and Prices (CACP). It supports the farmers from distress sales and induce them to make capital investment for the improvement of their farm. MSPs are currently announced for 24 commodities including seven cereals (paddy, wheat, barley, jowar, bajra, maize and ragi); five pulses (gram, arhar/tur, moong, urad and lentil); eight oil seeds, copra, raw jute, raw cotton and Virginia Flu Cured (VFC) tobacco. However the farmers are aware about MSP on wheat and paddy only which is a factor of changing cropping pattern towards these crops only. There is need of more awareness among the farmers about the prevailing MSP for different foodgrains to encourage a more diversified cropping pattern and to maintain nutrition security of the poor. The MSPs for wheat and paddy fixed by the department of Agriculture and Cooperation on the recommendation of the CACP since 2009-10 to 2017-18 (marketing seasons) are under

Table 7.2: MSPs for Wheat and Paddy

Year(marketing season)	MSP of Wheat	MSP of Paddy	
		Common	Grade A
2009-10	1080	1000	1030
2010-11	1100	1000	1030
2011-12	1170	1080	1110
2012-13	1285	1250	1280
2013-14	1350	1310	1345
2014-15	1400	1360	1400
2015-16	1450	1416	1450
2016-17	1525	1470	1510
2017-18	1625	1550	1590

Source: Department of Food and Public Distribution; Ministry of Consumer Affairs, Food and Public Distribution, Govt. of India

8.4.1 Industrial Development since Independence

You have already studied that in the post-independence period, India started to develop different types of industries with the help of economic planning. The index of industrial production (Base 1980-81=100) increased from 18.3 in 1950-51 to 65.3 in 1970-71. During this twenty years period of planning, some basic and heavy industries were developed in the country. Due to the expansion of the industrial base, the index of industrial production had again increased from 100 in 1980-81 to 196.4 in 1989-90, then to 154.9 in 1999-2000 and then to 221.5 in 2005-06. (**Source:** *Economic Survey*, 1992-93, 1997-98 and 2006-07). in the recent years (Base 2011-12=100) the IIP has increased to 1.4.6 in 2016-17, 104.4 in 2017-18 and the declined to 103.8 in 2018-19 (**Source:** CSO)

The process of industrialisation, launched as a conscious and deliberate policy under the framework of Industrial Policy Resolution of 1956 (*we shall discuss more about IPR, 1956 in the subsequent section 7.6 of this unit*) involved heavy investments in building up capacity over a wide spectrum of industries. As a result, industrial production has gone up by more than five times during the last 60 years, making India the tenth most industrial country in the world.

The industrial structure is widely diversified covering broadly the entire range of consumer, intermediate and capital goods. With the expansion of public sector enterprises, joint sector enterprises and private sector enterprises in the later period, various types of industries have developed in the country. The public sector industries produce goods like coal, steel, light and heavy engineering goods, power, petroleum, minerals and metals, fertilizers, chemicals and pharmaceuticals, textiles, transportation equipments, construction materials, electricity, gas etc.

The private sector corporates are engaged in manufacturing textiles, metal products, chemicals, construction materials,

- The NFSA, 2013 has been adopting as an innovative pro-poor PDS reform. However, it is not free from criticism.
- Different studies have shown that the risk of leakages and identification of beneficiaries problem still exist in NFSA, 2013.
- To ensure food security to the poor with wide coverage of PDS, it would be more appropriate to emphasize strategies, which reduce poverty and generate employment opportunities.

7.10 FURTHER READING

1) Datt, G and Mahajan, A. (2016). *Datt & Sundharam's Indian Economy.* New Delhi: S. Chand & Co.
2) Misra, S.K. & Puri, V.K. (2018). *Indian Economy.* New Delhi: Himalya Publishing House.
3) Sen, A. K. (1983). *Poverty and Famines: An Essay on Entitlement and Deprivation.* New Delhi: Oxford University Press.

7.11 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: (i) True (ii) False (iii) True

Ans to Q No 2: The group of people who are mainly food insecure belongs to people employed in ill-paid occupations, casual labourers, landless people, petty self-employed, workers and destitute including beggars, the people affected by natural disasters and most importantly the Women and Children.

Ans to Q No 3: Hunger and poverty is persistent in a food insecure economy. According to FAO estimates in "The State of Food Insecurity in the world, 2015" report 15.2% of Indian population is undernourished and 194.6 million people go hungry every day". Huger may be of two types- Seasonal Hunger and Chronic Hunger.

Seasonal Hunger is related to the cycles of food security and insecurity. Seasonal hunger is a type of hunger when a person doesn't get proper food neither in terms of quantity nor in terms of quality for some time during the year. On the other hand, Chronic Hunger is a

consequence of diets persistently inadequate in terms of quantity and/ or quality. Poorer sections of the society suffer from chronic hunger because of their very low income and in turn inability to buy food even for their survival .

Ans to Q No 4. The Food Corporation of India(FCI) is the major agency to run the network of PDS . FCI procures foodgrains, specially wheat and rice from the farmers immediately after the harvesting of these crops. The stocks of these grains are released through the Fair Price Shop to distribute among the poorer section of the society. FCI was established in the year 1965.

Ans to Q No 5. Minimum Support Price is the price fixed by the Govt. of India (before crop sowing) to protect the producer-farmers against excessive fall in price during bumper production years. The issue price is the one at which goods are released from FCI. The difference between MSP and CIP is known as Subsidy.

Ans to Q No 6: Ration cards issued under PDS are of three types-

(i) Below Poverty Line (BPL)

(ii) Above Poverty Line (APL)

(iii) Antyodaya Anna Yojana (AAY)

7.12 MODEL QUESTIONS

Short Questions (Answer each question in about 150 words)

Q 1: Discuss the problem of food security in India.

Q 2: Write a short note on the working of PDS in India.

Q 3: Explain the salient features of NFSA,2013

Q 4: Write short notes

a) Minimum Support Price

b) TPDS

c) Hunger and Malnutrition

Essay-type Questions (Answer each question in about 300-500 words)

Q 1: What is Food Security? Discuss different dimensions of food security.

- **Emphasis on Agricultural and service sectors:** A large infra-structure consisting of a network of irrigation, storage works and canals, hydro and thermal power generation, regional power grids, a largely electrified and diesel run railway system, national and state highways on which a rapidly growing road transport fleet can operate and telecommunications system covering most urban centres and linking India with the rest of the world has been built up. Additionally an efficient complex of refineries, pipelines, storage and distribution system has been built up. The development of modern industry as well as of agriculture has stimulated the growth of banking, insurance and commerce and required expansion and modernization of ports, shipping and internal and external air services.



CHECK YOUR PROGRESS

Q 1 : State whether the following statements are True or False :

(a) The British took steps to promote the indigenous industries of India. (T/F).

(b) Establishment of heavy industries with the help of the private sector was the strategy of the government. (T/F)

Q 2 : How did the strategy of import substitution help India? (Answer in about 50 words).

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8.4 INDUSTRIAL DEVELOPMENT AND THE TREND OF INDUSTRIAL PRODUCTION SINCE INDEPENDENCE

In the following sections, we shall discuss industrial development and the trend of industrial production of Indian industries since independence.

the expansion and modernization of coal mining, as coal is India's primary source of fuel for the industries. In fact, public sector enterprises were created to take leading roles in all industries and sectors viewed as central to the industrialization programme, including steel, chemicals, and engineering, as well as trade and finance.

- **Establishment of Heavy Industries:** From the very inception of economic planning in India, the engineering industry including machine building industry represented the core of India's development process. A broad-based industrial structure could not be sustained except on the basis of a strong, vibrant growth- oriented engineering sector. At the same time, the engineering industry was encouraged to develop indigenous skills and know-how and reduce dependence on imported technology. It was realized that technological skills and expertise alone could lead to high productivity levels and consequently to high levels of incomes. The engineering industry was therefore being promoted to act as a catalytic agent for overall economic development.
- **Import substitution:** Another aspect of the industrial strategy was the policy of import substitution. From the very beginning, a shortage of foreign exchange was anticipated as a major constraint to developmental efforts. It was therefore rightly decided to reduce the demand of imports and to promote generation of foreign exchange earnings. Substantial measures were taken for import substitution, and thus, preserving foreign exchange for development.
- **Emphasis on Science and Technology:** Significant progress has been made in science and technology. Indian scientists and technologists have made advances in the development of nuclear power, and the use of space technology for communications and resource development. The country has been able to train a cadre of technical manpower which can handle cement factories, chemical fertilizer units, oil refineries, power houses, steel plants, locomotive factories, engineering industries etc. However, small and cottage industries and other rural activities have not received the research and development support that they required.

Q 2: Illustrate the working of PDS. Discuss its limitations and suggest some important strategies for its improvement.

Q 3: "PDS is the largest food based safety net introduced by the Government of India"
Evaluate this statement considering the impact of PDS on poverty in India.

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UNIT 8 : INDIAN INDUSTRY : DEVELOPMENTAL EXPERIENCES

UNIT STRUCTURE

8.1 Learning Objectives

8.2 Introduction

8.3 Strategy of Industrial Development in India

8.4 Industrial Development and the Trend of Industrial Production since Independence

8.4.1 Industrial Development since Independence

8.4 2 Trend of Industrial Production since Independence

8.5 Problems of Industrialisation in India

8.6 Industrial Policy Resolution, 1956

8.7 Industrial Licensing Policy prior to 1991

8.8 New Industrial Policy, 1991

8.10 Let Us Sum Up

8.11 Further Reading

8.12 Answers to Check Your Progress

8.13 Model Questions

8.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- discuss the strategies of the industrial development in India
- state the status of industrial development and the trend of industrial production
- point out the problems Indian industries are having to tackle, explain the major features of IPR, 1956
- describe the licensing policies relating to industry
- explain the New Industrial Policy of 1991

8.2 INTRODUCTION

India has made considerable economic progress since its Independence. Most noticeable are the expansion and diversification of

production both in industry and agriculture. New technologies were introduced in many industries. Industrial investment took place in a large variety of new industries. Modern management techniques were introduced. Over the years, the Government has built the infrastructure required by the industry and has made massive investments to provide the much-needed facilities of power, communications, roads etc. However, with the changing of time, the economy has been transformed from public sector controlled economy into a liberal economy, where the private sector has to play the major role in the changing circumstances of the global economy. This unit will introduce you to the industrial sector of India, and the major changes it has witnessed over the years, in terms of policies and practices.

8.3 STRATEGY OF INDUSTRIAL DEVELOPMENT IN INDIA

The British left the industrial sector of India in a very distressed situation. On one hand, it destroyed the traditional handloom and handicraft industries of India and on the other, transformed the economy to be the consumer of machine made products imported from England. The centre piece of India's development strategy thus, was the modernization of the economy through industrialization. The development strategy adopted by the Indian planners consisted of the following:

- **Establishment the Industrial Infrastructure with Pubic Efforts:** Private industrial effort was viewed inadequate for the task of developing India's infrastructure. Underlying this view, public sector was involved in the task of establishing the industrial infrastructure of the country. Even non-infrastructure sectors such as steel, chemicals or machine tools may be subject to coordination or linkage issues that require a *'big push'* further supporting public interest. Thus, India's leaders embarked on a programme of government occupation of the 'commanding heights' of the economy.
- **Expansion and Modernisation of Industries:** The rapid pace of industrial growth and the development of productive capacity required