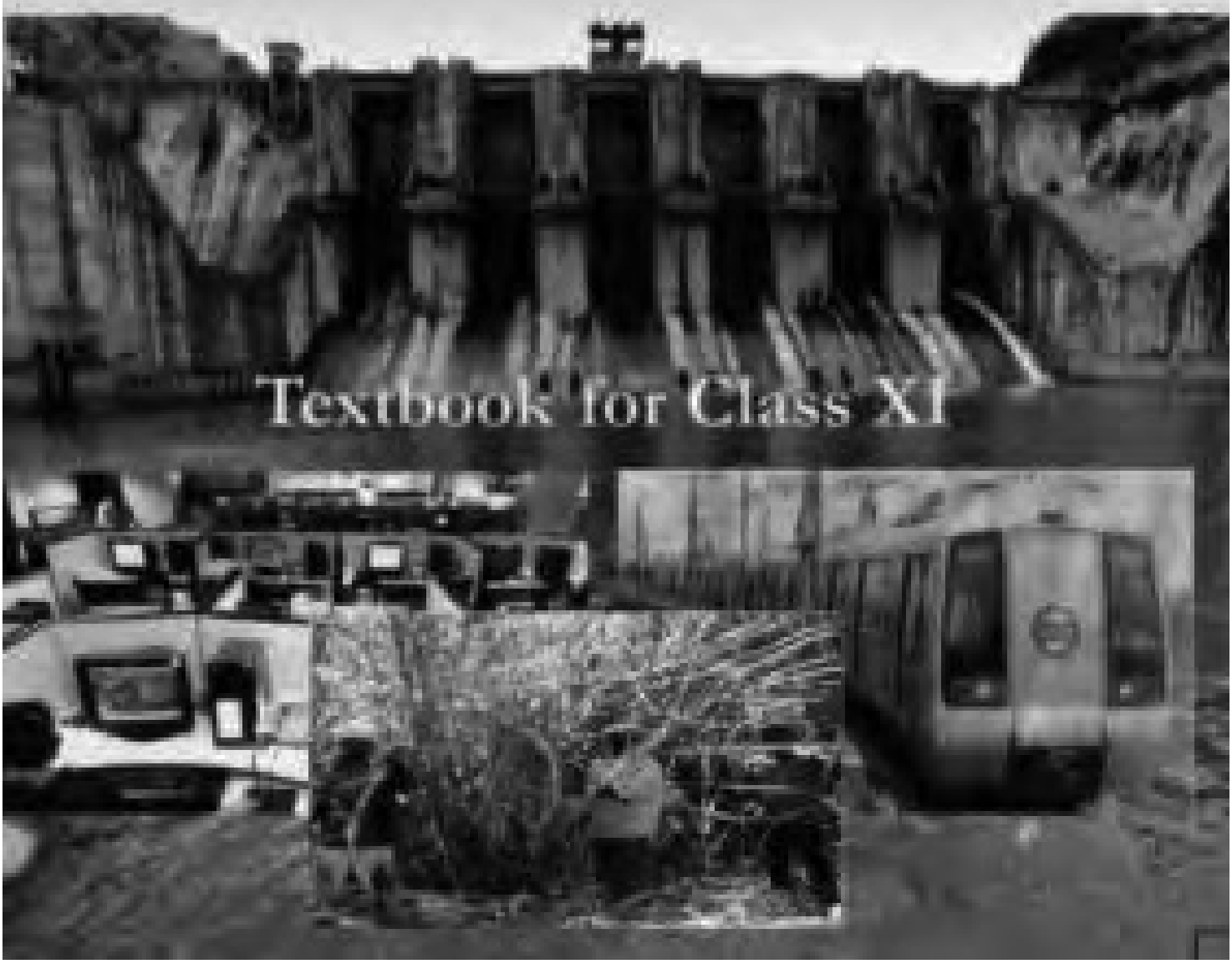
Indian Economic Development

Textbook for Class XI



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UNIT I

Development Policies and Experience (1947–90)

The two chapters in this unit give us an overview of the state of the Indian economy as it was at the eve of independence till after four decades of planned development, which was a path that India chose. This meant that the Government of India had to take a series of steps such as the establishment of the Planning Commission and announcement of five year plans. An overview of the goals of five year plans and a critical appraisal of the merits and limitations of planned development has been covered in this unit.

1

INDIAN ECONOMY ON THE EVE OF INDEPENDENCE

After studying this chapter, the learners will

become familiar with the state of the Indian economy in 1947, the year of India's Independence

understand the factors that led to the underdevelopment and stagnation of the Indian economy.

> ***"India is the pivot of our Empire... If the Empire loses any other part of its Dominion we can survive, but if we lose India, the sun of our Empire will have set."***
>
> ***Victor Alexander Vruce, the Viceroy of British India in 1894***

1.1 Introduction

The primary objective of this book, *Indian Economic Development*, is to familiarise you with the basic features of the Indian economy, and its development, as it is today, in the aftermath of Independence. However, it is equally important to know something about the country's economic past even as you learn about its present state and future prospects. So, let us first look at the state of India's economy prior to the country's independence and form an idea of the various considerations that shaped India's post-independence development strategy.

The structure of India's present-day economy is not just of current making; it has its roots steeped in history, particularly in the period when India was under 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 being 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.

1.2 Low Level of Economic Development under the Colonial Rule

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 its handicraft industries in the fields of cotton and silk textiles, metal and precious stone works etc. These products enjoyed a worldwide market based on the reputation of the fine quality of material used and the high standards of craftsmanship seen in all imports from India.

Box 1.1: Textile Industry in Bengal

Muslin is a type of cotton textile which had its origin in Bengal, particularly, places in and around Dhaka (spelled during the pre-independence period as Dacca), now the capital city of Bangladesh. 'Daccai Muslin' had gained worldwide fame as an exquisite type of cotton textile. The finest variety of muslin was called *malmal*. Sometimes, foreign travellers also used to refer to it as *malmal shahi* or *malmal khas* implying that it was worn by, or fit for, the royalty.

The economic policies pursued by the colonial government in India were concerned more with the protection and promotion of the economic interests of their home country 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 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 country's growth of aggregate 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 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

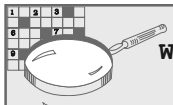
Box 1.2: Agriculture During Pre-British India

The French traveller, Bernier, described seventeenth century Bengal in the following way: "The knowledge I have acquired of Bengal in two visits inclines me to believe that it is richer than Egypt. It exports, in abundance, cottons and silks, rice, sugar and butter. It produces amply — for its own consumption — wheat, vegetables, grains, fowls, ducks and geese. It has immense herds of pigs and flocks of sheep and goats. Fish of every kind it has in profusion. From *rajmahal* to the sea is an endless number of canals, cut in bygone ages from the Ganges by immense labour for navigation and irrigation."

Fig. 1.1 *India's agricultural stagnation under the British colonial rule*

➢ Take note of the agricultural prosperity in our country in the seventeenth century. Contrast it with agricultural stagnation around the time when the British left India, around 200 years later.

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. Particularly, 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 **commercialisation of agriculture**. But this could hardly help farmers in improving their economic condition as, instead of producing food crops, now they were



Work These Out

- Compare the map of British India with that of independent India and find out the areas that became parts of Pakistan. Why were those parts so important to India from the economic point of view? (Refer, to your advantage, Dr Rajendra Prasad's book, *India Divided)*.
- What were the various forms of revenue settlement adopted by the British in India? Where did they implement them and to what effect? How far do you think those settlements have a bearing on the current agricultural scenario in India? (In your attempt to find answers to these questions, you may refer to Ramesh Chandra Dutt's *Economic History of India*, which comes in three volumes, and B.H. Baden-Powell's *The Land Systems of British India*, also in two volumes. For better comprehension of the subject, you can also try and develop an illustrated agrarian map of British India either by hand or with the help of your school computer. Remember, nothing helps better than an illustrated map to understand the subject at hand).

producing cash crops which were to be ultimately used by British industries back home. India's agricultural production received a further set back 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.

1.4 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 up to take pride of place so long enjoyed by the former. The primary motive of the colonial government behind this policy of systematically de-industrialising 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. Capital goods industry means industries which can produce machine tools which are, in turn, used for producing articles for current consumption. The establishment of a few manufacturing units here and

Work These Out

- Prepare a list showing where and when other modern industries of India were first set up. Can you also find out what the basic requirements are for setting up any modern industry? What, for example, might have been the reasons for the setting up of the Tata Iron and Steel Company at Jamshedpur, which is now in the state of Jharkhand?
- How many iron and steel factories are there in India at present? Are these iron and steel factories among the best in the world or do you think that these factories need restructuring and upgradation? If yes, how can this be done? There is an argument that industries which are not strategic in nature should not continue to be in the public sector. What is your view?
- On a map of India, mark the cotton textiles, jute mills and textile mills that existed at the time of independence.

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.

1.5 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 (see Box 1.3).

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,

Work These Out

- Prepare a list of items that were exported from and imported into India during the British rule.
- Collect information from the *Economic Survey* for various years published by the Ministry of Finance, Government of India, on various items of export from India and its imports. Compare these with imports and exports from the pre-independence era. Also find out the names of prominent ports which now handle the bulk of India's foreign trade.

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.

1.6 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,

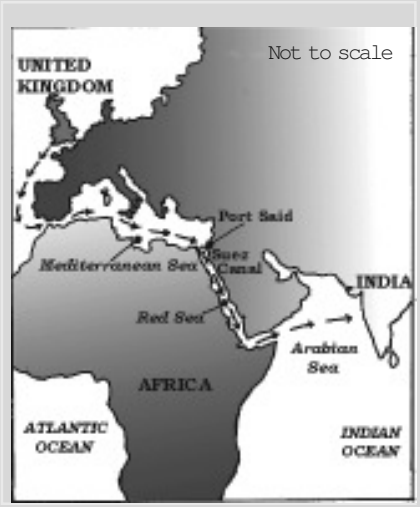


Fig.1.2 *Suez Canal: Used as highway between India and Britain*

Box 1.3: Trade Through the Suez Canal

Suez Canal is an artificial waterway running from north to south across the Isthmus of Suez in north-eastern Egypt. It connects Port Said on the Mediterranean Sea with the Gulf of Suez, an arm of the Red Sea. The canal provides a direct trade route for ships operating between European or American ports and ports located in South Asia, East Africa and Oceania by doing away with the need to sail around Africa. Strategically and economically, it is one of the most important waterways in the world. Its opening in 1869 reduced the cost of transportation and made access to the Indian market easier.

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 63 per thousand. **Life expectancy** was also very low—32 years in contrast to the present 63 years. In the absence of reliable data, it is difficult to specify the extent of poverty at that time 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.

1.7 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

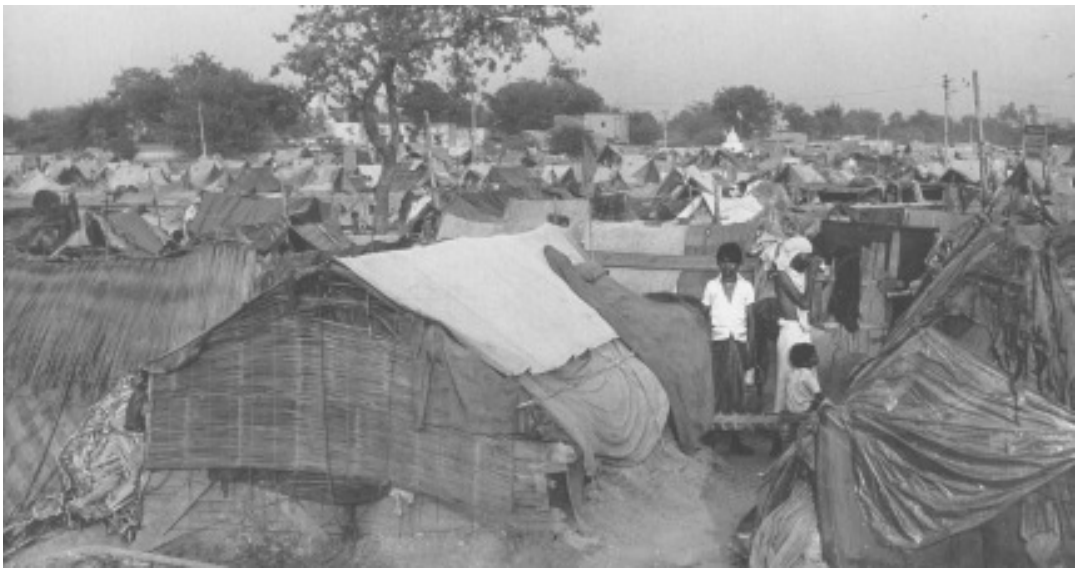


Fig. 1.3 *Poverty, malnutrition and poor health facilities also cause the population to grow slowly*

Work These Out

- Can you find out the reasons behind frequent occurrence of famines in India before independence? You may read from Nobel Laureate Amartya Sen's book, *Poverty and Famines.*
- Prepare a pie chart for the occupational structure in India at the time of independence.

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 had been an increase in the share of workforce in agriculture during the same time in states such as Orissa, Rajasthan and Punjab.

1.8 Infrastructure

Under the colonial regime, basic infrastructure such as railways, ports, water transport, posts and telegraphs did develop. However, the real motive behind this development was not to provide basic amenities to the people but to subserve various colonial interests. 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 mostly living 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 contributions. The railways affected the structure of the Indian economy in two important ways. On the one hand it enabled people to undertake long distance travel and thereby break geographical and cultural barriers while, on the other hand, 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

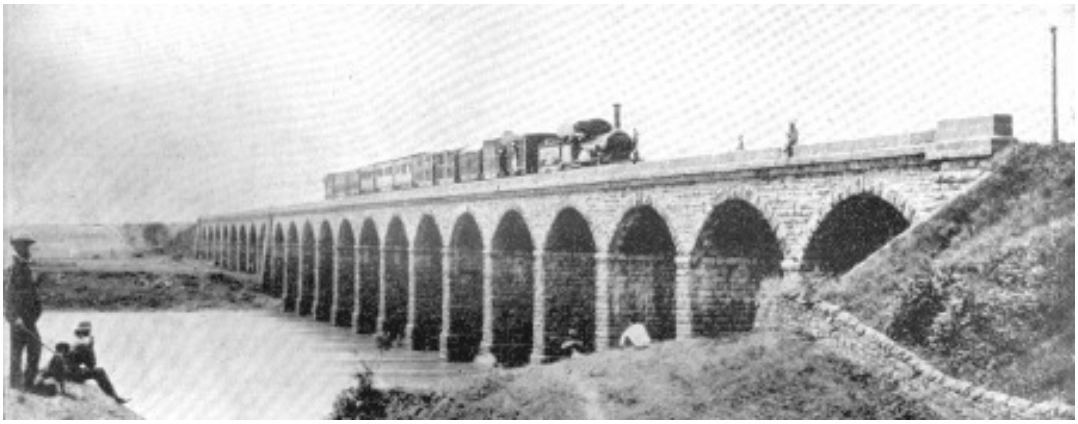


Fig. 1.4 *First Railway Bridge linking Bombay with Thane, 1854*

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 dispensation 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 had to be ultimately abandoned. The introduction of the expensive system of electric telegraph in India, similarly, served the purpose of maintaining law and order. The postal services, on the other hand, despite serving a useful public purpose, remained all through

Fig.1.5 *Tata Airlines, a division of Tata and Sons, was established in 1932 inaugurating the aviation sector in India*

Work This Out

- There is a perception still going around that in many ways the British administration in India was quite beneficial. This perception needs an informed debate. How would you look at this perception? Argue this out in your class—'Was the British Raj good for India'?

inadequate. You will learn more about the present status of various infrastructure in Chapter 8.

1.9 Conclusion

By the time India won its independence, the impact of the two-century long British colonial rule was already showing on all aspects of the Indian economy. 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.

Recap

- An understanding of the economy before independence is necessary to know and appreciate the level of development achieved during the post-independence period.
- Under the colonial dispensation, the economic policies of the government were concerned more with the protection and promotion of British economic interests than with the need to develop the economic condition of the colonised country and its people.
- The agricultural sector continued to experience stagnation and incremental deterioration despite the fact that the largest section of Indian population depended on it for sustenance.
- Systematic policies pursued by the British-India government led to the collapse of India's world famous handicraft industries without contributing, in any significant manner, to its replacement by a modern industrial base.
- Lack of adequate public health facilities, occurrence of frequent natural calamities and famines pauperised the hapless Indian people and resulted in engendering high mortality rates.
- Some efforts were made by the colonial regime to improve infrastructure facilities but these efforts were spiced with selfish motives though, in the long run, the independent Indian government built on this base the country's future economic and social development plan.

EXERCISES

1. What was the focus of the economic policies pursued by the colonial government in India? What were the impacts of these policies?
2. Name some notable economists who estimated India's per capita income during the colonial period.
3. What were the main causes of India's agricultural stagnation during the colonial period?
4. Name some modern industries which were in operation in our country at the time of independence.
5. What was the two-fold motive behind the systematic de-industrialisation effected by the British in pre-independent India?
6. The traditional handicrafts industries were ruined under the British rule. Do you agree with this view? Give reasons in support of your answer.
7. What objectives did the British intend to achieve through their policies of infrastructure development in India?
8. Critically appraise some of the shortfalls of the industrial policy pursued by the British colonial administration.
9. What do you understand by the drain of Indian wealth during the colonial period?
10. Which is regarded as the defining year to mark the demographic transition from its first to the second decisive stage?
11. Give a quantitative appraisal of India's demographic profile during the colonial period.
12. Highlight the salient features of India's pre-independence occupational structure.
13. Underscore some of India's most crucial economic challenges at the time of independence.
14. When was India's first official census operation undertaken?
15. Indicate the volume and direction of trade at the time of independence.
16. Were there any positive contributions made by the British in India? Discuss.

SUGGESTED ADDITIONAL ACTIVITIES

1. Prepare a list of goods and services that were available to people in pre-independence India in rural and urban areas. Compare it with the consumption pattern of such goods and services by the people today. Highlight the perceptible difference in the people's standard of living.

2. Find pictures of towns/villages, in your vicinity, of the pre-independence period and compare these with their present scenario. What changes can you mark? Are such changes for better or for worse? Discuss.

3. Rally around your teacher and organise a group discussion on 'Has the *zamindari* system really been abolished in India'? If the consensus is negative, then what measures would you think should be taken to banish it and why?

4. Identify the major occupations followed by the people of our country at the time of independence. What major occupations do the people follow today? In the light of reform policies, how would you visualise the occupational scenario in India 15 years from now—say, 2020?

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2

Indian Economy 1950-1990

After studying this chapter, the learners will

- come to know the goals of India's five year plans
- know about the development policies in different sectors such as agriculture and industry from 1950-1990
- learn to think about the merits and limitations of a regulated economy.

> ***The central objective of Planning in India... is to initiate a process of development which will raise the living standards and open out to the people new opportunities for a richer and more varied life.***
>
> ***First Five Year Plan***

2.1 Introduction

On 15 August 1947, India woke to a new dawn of freedom: finally we were masters of our own destiny after some two hundred years of British rule; the job of nation building was now in our own hands. The leaders of independent India had to decide, among other things, the type of **economic system** most suitable for our nation, a system which would promote the welfare of all rather than a few. There are different types of economic systems (see Box 2.1) and among them, socialism appealed to Jawaharlal Nehru the most. However, he was not in favour of the kind of socialism established in the former Soviet Union where all the means of production, i.e., all the factories and farms in the country, were owned by the government. There was no private property. It is not possible in a democracy like India for the government to change the ownership pattern of land and other properties of its citizens in the way that it was done in the former Soviet Union.

Nehru, and many other leaders and thinkers of the newly independent India, sought an alternative to the extreme versions of capitalism and socialism. Basically sympathising with the socialist outlook, they found the answer in an economic system which, in their view, combined the best features of socialism without its drawbacks. In this view, India would be a 'socialist' society with a strong public sector but also with private property and democracy; the government would 'plan' (see Box 2.2) for the

Work These Out

- Prepare a chart on the different types of economic systems prevalent in the world. List out the countries as capitalist, socialist and mixed economy.
- Plan a class trip to an agriculture farm. Divide the class into seven groups with each group to plan a specific goal, for example, the purpose of the visit, money expenditure involved, time taken, resources, people accompanying the group and who need to be contacted, possible places of visit, possible questions to be asked etc. Now, with the help of your teacher, compile these specific goals and compare with long-term goals of successful visit to an agricultural farm.

Box 2.1: Types of Economic Systems

Every society has to answer three questions

- What goods and services should be produced in the country?
- How should the goods and services be produced? Should producers use more human labour or more capital (machines) for producing things?
- How should the goods and services be distributed among people?

One answer to these questions is to depend on the **market forces** of supply and demand. In a market economy, also called capitalism, only those consumer goods will be produced that are in demand, i.e., goods that can be sold profitably either in the domestic or in the foreign markets. If cars are in demand, cars will be produced and if bicycles are in demand, bicycles will be produced. If labour is cheaper than capital, more labour-intensive methods of production will be used and vice-versa. In a capitalist society the goods produced are distributed among people not on the basis of what people need but on the basis of what people can afford and are willing to purchase. This means that a sick person will be able to use the required medicine only if he/she can afford to buy it; if they cannot afford the medicine they will not be able to use it even if they need it urgently. Such a society did not appeal to Jawaharlal Nehru, our first prime minister, for it meant that the great majority of people of the country would be left behind without the chance to improve their quality of life.

A **socialist** society answers the three questions in a totally different manner. In a socialist society the government decides what goods are to be produced in accordance with the needs of society. It is assumed that the government knows what is good for the people of the country and so the desires of individual consumers are not given much importance. The government decides how goods are to be produced and how they should be distributed. In principle, distribution under socialism is supposed to be based on what people need and not on what they can afford to purchase. Unlike under capitalism, for example, a socialist nation provides free health care to the citizens who need it. Strictly, a socialist society has no private property since everything is owned by the state. With the collapse of the Soviet system in the last decades of the twentieth century, socialist economies in the former Soviet Union and the socialist states in Eastern Europe ceased to exist.

Most economies are **mixed economies,** i.e., the government and the market together answer the three questions of what to produce, how to produce and how to distribute what is produced. In a mixed economy, the market will provide whatever goods and services it can produce well, and the government will provide essential goods and services which the market fails to do.

Box 2.2: What is a Plan?

A plan spells out how the resources of a nation should be put to use. It should have some general goals as well as specific objectives which are to be achieved within a specified period of time; in India plans are of five years duration and are called five year plans (we borrowed this from the former Soviet Union, the pioneer in national planning). Our plan documents not only specify the objectives to be attained in the five years of a plan but also what is to be achieved over a period of twenty years. This long-term plan is called 'perspective plan'. The five year plans are supposed to provide the basis for the perspective plan.

It will be unrealistic to expect all the goals of a plan to be given equal importance in all the plans. In fact the goals may actually be in conflict. For example, the goal of introducing modern technology may be in conflict with the goal of increasing employment if the technology reduces the need for labour. The planners have to balance the goals, a very difficult job indeed. We find different goals being emphasised in different plans in India.

Our five year plans do not spell out how much of each and every good and service is to be produced. This is neither possible nor necessary (the former Soviet Union tried to do this and failed). It is enough if the plan is specific about the sectors where it plays a commanding role, for instance, power generation and irrigation, while leaving the rest to the market.

economy with the private sector being encouraged to be part of the plan effort. The 'Industrial Policy Resolution' of 1948 and the Directive Principles of the Indian Constitution reflected this outlook. In 1950, the **Planning Commission** was set up with the Prime Minister as its Chairperson. The era of five year plans had begun.

2.2 The Goals of Five Year Plans

A plan should have some clearly specified goals. The goals of the five year plans are: growth, modernisation, self-reliance and equity. This does not mean that all the plans have given equal importance to all these goals. Due to limited resources, a choice has to be made in each plan about which of the goals is to be given primary importance. Nevertheless, the planners have to ensure that, as far as possible, the policies of the plans do not contradict these four goals. Let us now learn about the goals of planning in some detail.

Growth: It refers to increase in the country's capacity to produce the output of goods and services within the country. It implies either a larger stock of productive capital, or a larger size of supporting services like transport and banking, or an increase in the efficiency of productive capital and services. A good indicator of economic growth, in the language of

Box 2.3: Mahalanobis: the Architect of Indian Planning

Many distinguished thinkers contributed to the formulation of our five year plans. Among them, the name of the statistician, Prasanta Chandra Mahalanobis, stands out.

Planning, in the real sense of the term, began with the Second Five Year Plan. The Second Plan, a landmark contribution to development planning in general, laid down the basic ideas regarding goals of Indian planning; this plan was based on the ideas of Mahalanobis. In that sense, he can be regarded as the architect of Indian planning.

Mahalanobis was born in 1893 in Calcutta. He was educated at the Presidency College in Calcutta and at Cambridge University in England. His contributions to the subject of statistics brought him international fame. In 1946 he was made a Fellow (member) of Britain's Royal Society, one of the most prestigious organisations of scientists; only the most outstanding scientists are made members of this Society.

Mahalanobis established the Indian Statistical Institute (ISI) in Calcutta and started a journal, *Sankhya,* which still serves as a respected forum for statisticians to discuss their ideas. Both, the ISI and *Sankhya,* are highly regarded by statisticians and economists all over the world to this day.

During the second plan period, Mahalanobis invited many distinguished economists from India and abroad to advise him on India's economic development. Some of these economists became Nobel Prize winners later, which shows that he could identify individuals with talent. Among the economists invited by Mahalanobis were those who were very critical of the socialist principles of the second plan. In other words, he was willing to listen to what his critics had to say, the mark of a great scholar.

Many economists today reject the approach to planning formulated by Mahalanobis but he will always be remembered for playing a vital role in putting India on the road to economic progress, and statisticians continue to profit from his contribution to statistical theory.

Source: *Sukhamoy Chakravarty, 'Mahalanobis, Prasanta Chandra' in John Eatwell et.al, (Eds.) The New Palgrave Dictionary: Economic Development, W.W. Norton, New York and London.*

Box 2.4: The Service Sector

As a country develops, it undergoes 'structural change'. In the case of India, the structural change is peculiar. Usually, with development, the share of agriculture declines and the share of industry becomes dominant. At higher levels of development, the service sector contributes more to the GDP than the other two sectors. In India, the share of agriculture in the GDP was more than 50 per cent—as we would expect for a poor country. But by 1990 the share of the service sector was 40.59 per cent, more than that of agriculture or industry, like what we find in developed nations. This phenomenon of growing share of the service sector was accelerated in the post 1991 period (this marked the onset of globalisation in the country which will be discussed in a subsequent chapter).

economics, is steady increase in the Gross Domestic Product (GDP). The GDP is the market value of all the goods and services produced in the country during a year. You can think of the GDP as a cake: growth is increase in the size of the cake. If the cake is larger, more people can enjoy it. It is necessary to produce more goods and services if the people of India are to enjoy (in the words of the First Five Year Plan) a more rich and varied life.

The GDP of a country is derived from the different sector's of the economy, namely the agricultural sector, the industrial sector and the service sector. The contribution made by each of these sectors makes up the **structural composition** of the economy. In some countries, growth in agriculture contributes more to the GDP growth, while in some countries the growth in the service sector contributes more to GDP growth (see Box 2.4).

Modernisation: To increase the production of goods and services the producers have to adopt new technology. For example, a farmer can increase the output on the farm by using new seed varieties instead of using the old ones. Similarly, a factory can increase output by using a new type of machine. Adoption of new technology is called modernisation.

However, modernisation does not refer only to the use of new technology but also to changes in social outlook such as the recognition that women should have the same rights as men. In a traditional society, women are supposed to remain at home while men work. A modern society makes use of the talents of women in the work place — in banks, factories, schools etc. — and such a society will be more civilised and prosperous.

Self-reliance: A nation can promote economic growth and modernisation by using its own resources or by using resources imported from other nations. The first seven five year plans gave importance to self-reliance which means avoiding imports of those goods which could be

Work These Out

- Discuss in your class the changes in technology used for
  - (a) Production of food grains
  - (b) Packaging of products
  - (c) Mass communication.
- Find out and prepare a list of items that India used to import and export during 1950-51 and 1990-91.
  - (a) Observe the difference
  - (b) Do you see the impact of self-reliance? Discuss.

For getting these details you may refer to *Economic Survey* of the latest year.

produced in India itself. This policy was considered a necessity in order to reduce our dependence on foreign countries, especially for food. It is understandable that people who were recently freed from foreign domination should give importance to self-reliance. Further, it was feared that dependence on imported food supplies, foreign technology and foreign capital may make India's sovereignty vulnerable to foreign interference in our policies.

Equity: Now growth, modernisation and self-reliance, by themselves, may not improve the kind of life which people are living. A country can have high growth, the most modern technology developed in the country itself, and also have most of its people living in poverty. It is important to ensure that the benefits of economic prosperity reach the poor sections as well instead of being enjoyed only by the rich. So, in addition to growth, modernisation and self-reliance, equity is also important: every Indian should be able to meet his or her basic needs such as food, a decent house, education and health care and inequality in the distribution of wealth should be reduced.

Let us now see how the first seven five year plans, covering the period 1950-1990, attempted to attain these four goals and the extent to which they succeeded in doing so, with reference to agriculture, industry and trade. You will study the policies and developmental issues taken up after 1991 in Chapter 3.

2.3 Agriculture

You have learnt in Chapter 1 that during the colonial rule there was neither growth nor equity in the agricultural sector. The policy makers of independent India had to address these issues which they did through land reforms and promoting the use of 'miracle seeds' which ushered in a revolution in Indian agriculture.

Land Reforms: At the time of independence, the land tenure system was characterised by intermediaries

Box 2.5: Ownership and Incentives

The policy of 'land to the tiller' is based on the idea that the cultivators will take more interest—they will have more incentive—in increasing output if they are the owners of the land. This is because ownership of land enables the tiller to make profit from the increased output. Tenants do not have the incentive to make improvements on land since it is the landowner who would benefit more from higher output. The importance of ownership in providing incentives is well illustrated by the carelessness with which farmers in the former Soviet Union used to pack fruits for sale. It was not uncommon to see farmers packing rotten fruits along with fresh fruits in the same box. Now, every farmer knows that the rotten fruits will spoil the fresh fruits if they are packed together. This will be a loss to the farmer since the fruits cannot be sold. So why did the Soviet farmers do something which would so obviously result in loss for them? The answer lies in the incentives facing the farmers. Since farmers in the former Soviet Union did not own any land, they neither enjoyed the profits nor suffered the losses. In the absence of ownership, there was no incentive on the part of farmers to be efficient, which also explains the poor performance of the agricultural sector in the Soviet Union despite availability of vast areas of highly fertile land.

Source: *Thomas Sowell, Basic Economics: A Citizen's Guide to the Economy, New York: Basic Books, 2004, Second Edition.*

(variously called *zamindars, jagirdars* etc.) who merely collected rent from the actual tillers of the soil without contributing towards improvements on the farm. The low productivity of the agricultural sector forced India to import food from the United States of America (U.S.A.). Equity in agriculture called for **land reforms** which primarily refer to change in the ownership of landholdings. Just a year after independence, steps were taken to abolish intermediaries and to make the tillers the owners of land. The idea behind this move was that ownership of land would give incentives (see Box 2.5) to the tillers to invest in making improvements provided sufficient capital was made available to them.

Land ceiling was another policy to promote equity in the agricultural sector. This means fixing the maximum size of land which could be owned by an individual. The purpose of land ceiling was to reduce the concentration of land ownership in a few hands.

The abolition of intermediaries meant that some 200 lakh tenants came into direct contact with the government — they were thus freed from being exploited by the *zamindars*. The ownership conferred on tenants gave them the incentive to increase output and this contributed to growth in agriculture. However, the goal of equity was not fully served by abolition of intermediaries. In some areas the former *zamindars*

continued to own large areas of land by making use of some loopholes in the legislation; there were cases where tenants were evicted and the landowners claimed to be self-cultivators (the actual tillers), claiming ownership of the land; and even when the tillers got ownership of land, the poorest of the agricultural labourers (such as sharecroppers and landless labourers) did not benefit from land reforms.

The land ceiling legislation also faced hurdles. The big landlords challenged the legislation in the courts, delaying its implementation. They used this delay to register their lands in the name of close relatives, thereby escaping from the legislation. The legislation also had a lot of loopholes which were exploited by the big landholders to retain their land. Land reforms were successful in Kerala and West Bengal because these states had governments committed to the policy of land to the tiller. Unfortunately other states did not have the same level of commitment and vast inequality in landholding continues to this day.

The Green Revolution: At independence, about 75 per cent of the country's population was dependent on agriculture. Productivity in the agricultural sector was very low because of the use of old technology and the absence of required infrastructure for the vast majority of farmers. India's agriculture vitally depends on the monsoon and if the monsoon fell short the farmers were in trouble unless they had access to irrigation facilities which very few had. The stagnation in agriculture during the colonial rule was permanently broken by the green revolution: this refers to the large increase in production of food grains resulting from the use of **high yielding variety (HYV) seeds** especially for wheat and rice. The use of these seeds required the use of fertiliser and pesticide in the correct quantities as well as regular supply of water; the need for these inputs in correct proportions is vital. The farmers who could benefit from HYV seeds required reliable irrigation facilities as well as the financial resources to purchase fertiliser and pesticide. As a result, in the first phase of the green revolution (approximately mid 1960s upto mid 1970s), the use of HYV seeds was restricted to the more affluent states such as Punjab, Andhra Pradesh and Tamil Nadu. Further, the use of HYV seeds primarily benefited the wheat-growing regions only. In the second phase of the green revolution (mid-1970s to mid-1980s), the HYV technology spread to a larger number of states and benefited more variety of crops. The spread of green revolution technology enabled India to achieve self-sufficiency in food grains; we no longer had to be at the mercy of America, or any other nation, for meeting our nation's food requirements.

Growth in agricultural output is important but it is not enough: if a large proportion of this increase is

consumed by the farmers themselves instead of being sold in the market, the higher output will not make much of a difference to the economy as a whole. If, on the other hand, a substantial amount of agricultural produce is sold in the market by the farmers, the higher output can make a difference to the economy. The portion of agricultural produce which is sold in the market by the farmers is called **marketed surplus**. Fortunately, as pointed out by the famous economist C.H. Hanumantha Rao, a good proportion of the rice and wheat produced during the green revolution period (available as marketed surplus) was sold by the farmers in the market. As a result, the price of food grains declined relative to other items of consumption. The low-income groups, who spend a large percentage of their income on food, benefited from this decline in relative prices. The green revolution enabled the government to procure sufficient amount of food grains to build a stock which could be used in times of food shortage.

While the nation had immensely benefited from the green revolution, the technology involved was not free from risks. One such risk was the possibility that it would increase the disparities between small and big farmers — since only the big farmers could afford the required inputs, thereby reaping most of the benefits of the green revolution. Moreover, the HYV crops were also more prone to attack by pests and the small farmers who adopted this technology could lose everything in a pest attack.

Fortunately, these fears did not come true because of the steps taken by the government. The government provided loans at a low interest rate to small farmers and subsidised fertilisers so that small farmers could also have access to the needed inputs. Since the small farmers could obtain the required inputs, the output on small farms equalled the output on large farms in the course of time. As a result, the green revolution benefited the small as well as rich farmers. The risk of the small farmers being ruined when pests attack their crops was considerably reduced by the services rendered by research institutes established by the government. You should note that the green revolution would have favoured the rich farmers only if the state did not play an extensive role in ensuring that the small farmer also gains from the new technology.

The Debate Over Subsidies: The economic justification of subsidies in agriculture is, at present, a hotly debated question. It is generally agreed that it was necessary to use subsidies to provide an incentive for adoption of the new HYV technology by farmers in general and small farmers in particular. Any new technology will be looked upon as being risky by farmers. Subsidies were, therefore, needed to encourage farmers to test the new technology. Some economists believe that once the technology is found profitable and is widely adopted, subsidies should be phased out since their purpose has been served. Further, subsidies are meant to benefit the farmers but a substantial amount of fertiliser subsidy also benefits the fertiliser industry; and among farmers, the subsidy largely benefits the farmers in the more prosperous regions. Therefore, it is argued that there is no case for continuing with fertiliser subsidies; it does not benefit the target group and it is a huge burden on the government's finances (see also Box 2.6).

On the other hand, some believe that the government should continue with agricultural subsidies because farming in India continues to be a risky business. Most farmers are very poor and they will not be able to afford the required inputs without subsidies. Eliminating subsidies will increase the inequality between rich and poor farmers and violate the goal of equity. These experts argue that if subsidies are largely benefiting the fertiliser industry and big farmers, the correct policy is not to abolish subsidies but to take steps to ensure that only the poor farmers enjoy the benefits.

Thus, by the late 1960s, Indian agricultural productivity had increased sufficiently to enable the country to be self-sufficient in food grains. This is an achievement to be proud of. On the negative side, some 65 per cent of the country's population continued to be employed in agriculture even as late as 1990. Economists have found that as

Box 2.6: Prices as Signals

You would have learnt in an earlier class about how prices of goods are determined in the market. It is important to understand that prices are signals about the availability of goods. If a good becomes scarce, its price will rise and those who use this good will have the incentive to make efficient decisions about its use based on the price. If the price of water goes up because of lower supply, people will have the incentive to use it with greater care; for example, they may stop watering the garden to conserve water. We complain whenever the price of petrol increases and blame it on the government. But the increase in petrol price reflects greater scarcity and the price rise is a signal that less petrol is available—this provides an incentive to use less petrol or look for alternate fuels.

Some economists point out that subsidies do not allow prices to indicate the supply of a good. When electricity and water are provided at a subsidised rate or free, they will be used wastefully without any concern for their scarcity. Farmers will cultivate water intensive crops if water is supplied free, although the water resources in that region may be scarce and such crops will further deplete the already scarce resources. If water is priced to reflect scarcity, farmers will cultivate crops suitable to the region. Fertiliser and pesticide subsidies result in overuse of resources which can be harmful to the environment. Subsidies provide an incentive for wasteful use of resources. Think about subsidies in terms of incentives and ask yourself whether it is wise from the economic viewpoint to provide free electricity to farmers.

a nation becomes more prosperous, the proportion of GDP contributed by agriculture as well as the proportion of population working in the sector declines considerably. In India, between 1950 and 1990, the proportion of GDP contributed by agriculture declined significantly but not the population depending on it (67.5 per cent in 1950 to 64.9 per cent by 1990). Why was such a large proportion of the population engaged in agriculture although agricultural output could have grown with much less people working in the sector? The answer is that the industrial sector and the service sector did not absorb the people working in the agricultural sector. Many economists call this an important failure of our policies followed during 1950-1990.

2.4 Industry and Trade

Economists have found that poor nations can progress only if they have a good industrial sector. Industry provides employment which is more stable than the employment in agriculture; it promotes modernisation and overall prosperity. It is for this reason that the five year plans place a lot of emphasis on industrial development. You might have studied in the previous chapter that, at the time of independence, the variety of industries was very narrow

Work These Out

- A group of students may visit an agricultural farm, prepare a case study on the method of farming used, that is, types of seeds, fertilisers, machines, means of irrigation, cost involved, marketable surplus and income earned. It will be beneficial if the changes in cultivation methods could be collected from an elderly member of the farming family
  (a) Discuss the findings in your class.
  (b) The different groups can then prepare a chart showing variations in cost of production, productivity, use of seeds, fertilisers, means of irrigation, time taken, marketable surplus and income of the family.
- Collect newspaper cuttings related to the World Bank, International Monetary Fund, World Trade Organisation (and meets of G7, G8, G10 countries). Discuss the views shared by the developed and developing countries on farm subsidies.
- Prepare pie charts on the occupational structure of the Indian economy available in the following table.

Sector	*1950–51*	*1990–91*
Agriculture	72.1	66.8
Industry	10.7	12.7
Services	17.2	20.5

- Study the arguments for and against agricultural subsidies. What is your view on this issue?
- Some economists argue that farmers in other countries, particularly developed countries, are provided with high amount of subsidies and are encouraged to export their produce to other countries. Do you think our farmers will be able to compete with farmers from developed countries? Discuss.

— largely confined to cotton textiles and jute. There were two well-managed iron and steel firms — one in Jamshedpur and the other in Kolkata — but, obviously, we needed to expand the industrial base with a variety of industries if the economy was to grow.

Market and State in Indian Industrial Development: The big question facing the policy makers was — what should be the role of the government and the private sector in industrial development? At the time of independence, Indian industrialists did not have the capital to undertake

investment in industrial ventures required for the development of our economy; nor was the market big enough to encourage industrialists to undertake major projects even if they had the capital to do so. It is principally for these reasons that the state had to play an extensive role in promoting the industrial sector. In addition, the decision to develop the Indian economy on socialist lines led to the policy of the state controlling the commanding heights of the economy, as the Second Five Year plan put it. This meant that the state would have complete control of those industries that were vital for the economy. The policies of the private sector would have to be complimentary to those of the public sector, with the public sector leading the way.

Industrial Policy Resolution 1956 (IPR 1956): In accordance with the goal of the state controlling the commanding heights of the economy, the Industrial Policy Resolution of 1956 was adopted. This resolution formed the basis of the Second Five Year Plan, the plan which tried to build the basis for a socialist pattern of society. This resolution classified industries into three categories. The first category comprised industries which would be exclusively owned by the state; the second category consisted of industries in which the private sector could supplement the efforts of the state sector, with the state taking the sole responsibility for starting new units; the third category consisted of the remaining industries which were to be in the private sector.

Although there was a category of industries left to the private sector, the sector was kept under state control through a system of licenses. No new industry was allowed unless a license was obtained from the government. This policy was used for promoting industry in backward regions; it was easier to obtain a license if the industrial unit was established in an economically backward area. In addition, such units were given certain concessions such as tax benefits and electricity at a lower tariff. The purpose of this policy was to promote **regional equality**.

Even an existing industry had to obtain a license for expanding output or for diversifying production (producing a new variety of goods). This was meant to ensure that the quantity of goods produced was not more than what the economy required. License to expand production was given only if the government was convinced that the economy required the larger quantity of goods.

Small-scale Industry: In 1955, the Village and Small-scale Industries Committee, also called the Karve Committee, noted the possibility of using small-scale industries for promoting rural development. A 'small-scale industry' is defined with reference to the maximum investment allowed on the assets of a unit. This limit has changed over a period of time. In 1950 a small-scale industrial unit was one which invested

a maximum of rupees five lakh; at present the maximum investment allowed is rupees one crore.

It was believed that small-scale industries are more 'labour intensive' i.e., they use more labour than the large-scale industries and, therefore, generate more employment. But these industries cannot compete with the big industrial firms; it is obvious that development of small-scale industry requires them to be shielded from the large firms. For this purpose, the production of a number of products was reserved for the small-scale industry; the criterion of reservation being the ability of these units to manufacture the goods. They were also given concessions such as lower excise duty and bank loans at lower interest rates.

2.5 Trade Policy: Import Substitution

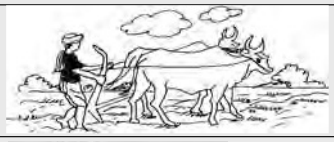
The industrial policy that we adopted was closely related to the **trade policy**. In the first seven plans, trade was characterised by what is commonly called an **inward looking** trade strategy. Technically, this strategy is called **import substitution**. This policy aimed at replacing or substituting imports with domestic production. For example, instead of importing vehicles made in a foreign country, industries would be encouraged to produce them in India itself. In this policy the government protected the domestic industries from foreign competition. Protection from imports took two forms: tariffs and quotas. Tariffs are a tax on imported goods; they make imported goods more expensive and discourage their use. Quotas specify the quantity of goods which can be imported. The effect of tariffs and quotas is that they restrict imports and, therefore, protect the domestic firms from foreign competition.

The policy of protection is based on the notion that industries of developing countries are not in a position to compete against the goods produced by more developed economies. It is assumed that if the domestic industries are protected they will learn to compete in the course of time. Our planners also feared the possibility of foreign exchange being spent on import of luxury goods if no restrictions were placed on imports. Nor was any serious thought given to promote exports until the mid-1980s.

Effect of Policies on Industrial Development: The achievements of India's industrial sector during the first seven plans are impressive indeed. The proportion of GDP contributed by the industrial sector increased in the period from 11.8 per cent in 1950-51 to 24.6 per cent in 1990-91. The rise in the industry's share of GDP is an important indicator of development. The six per cent annual growth rate of the industrial sector during the period is commendable. No longer was Indian industry restricted largely to cotton textiles and jute; in fact, the industrial sector became well

Work These Out

- Construct a pie chart for the following table on sectoral contribution to GDP and discuss the difference in the contribution of the sectors in the light of effects of development during 1950-91.

Sector	*1950-51*	*1990-91*
Agriculture 	59.0	34.9
Industry	13.0	24.6
Services	28.0	40.5

- Conduct a debate in your classroom on the usefulness of Public Sector Undertakings (PSUs) by dividing the class into two groups. One group may speak in favour of PSUs and the other group against the motion (involve as many students as possible and encourage them to give examples).

diversified by 1990, largely due to the public sector. The promotion of small-scale industries gave opportunities to those people who did not have the capital to start large firms to get into business. Protection from foreign competition enabled the development of indigenous industries in the areas of electronics and automobile sectors which otherwise could not have developed.

In spite of the contribution made by the public sector to the growth of the Indian economy, some economists are critical of the performance of many public sector enterprises. It was proposed at the beginning of this chapter that initially public sector was required in a big way. It is now widely held that state enterprises continued to produce certain goods and services (often monopolising them) although this was no longer required. An example is the provision of telecommunication service. The government had the monopoly of this service even after private sector firms could also provide it. Due to the absence of competition, even till the late 1990s, one had to wait for a long time to get a telephone connection. Another instance could be the establishment of Modern Bread, a bread-manufacturing firm, as if the

private sector could not manufacture bread! In 2001 this firm was sold to the private sector. The point is that no distinction was made between (i) what the public sector alone can do and (ii) what the private sector can also do. For example, even now only the public sector can supply national defense and free medical treatment for poor patients. And even though the private sector can manage hotels well, yet, the government also runs hotels. This has led some scholars to argue that the state should get out of areas which the private sector can manage and the government may concentrate its resources on important services which the private sector cannot provide.

Many public sector firms incurred huge losses but continued to function because it is very difficult, almost impossible, to close a government undertaking even if it is a drain on the nation's limited resources. This does not mean that private firms are always profitable (indeed, quite a few of the public sector firms were originally private firms which were on the verge of closure due to losses; they were then nationalised to protect the jobs of the workers). However, a loss-making private firm will not waste resources by being kept running despite the losses.

The need to obtain a license to start an industry was misused by industrial houses; a big industrialist would get a license not for starting a new firm but to prevent competitors from starting new firms. The excessive regulation of what came to be called the **permit license raj** prevented certain firms from becoming more efficient. More time was spent by industrialists in trying to obtain a license or lobby with the concerned ministries rather than on thinking about how to improve their products.

The protection from foreign competition is also being criticised on the ground that it continued even after it proved to do more harm than good. Due to restrictions on imports, the Indian consumers had to purchase whatever the Indian producers produced. The producers were aware that they had a captive market; so they had no incentive to improve the quality of their goods. Why should they think of improving quality when they could sell low quality items at a high price? Competition from imports forces our producers to be more efficient.

Nevertheless, scholars point out that the public sector is not meant for earning profits but to promote the welfare of the nation. The public sector firms, on this view, should be evaluated on the basis of the extent to which they contribute to the welfare of people and not on the profits they earn. Regarding protection, some economists hold that we should protect our producers from foreign competition as long as the rich nations continue to do so. Owing to all these conflicts, economists called for a change in our policy. This, alongwith other problems, led the government to introduce a new economic policy in 1991.

2.6 Conclusion

The progress of the Indian economy during the first seven plans was impressive indeed. Our industries became far more diversified compared to the situation at independence. India became self- sufficient in food production thanks to the green revolution. Land reforms resulted in abolition of the hated *zamindari* system. However, many economists became dissatisfied with the performance of many public sector enterprises. Excessive government regulation prevented growth of entrepreneurship. In the name of self-reliance, our producers were protected against foreign competition and this did not give them the incentive to improve the quality of goods that they produced. Our policies were 'inward oriented' and so we failed to develop a strong export sector. The need for reform of economic policy was widely felt in the context of changing global economic scenario, and the new economic policy was initiated in 1991 to make our economy more efficient. This is the subject of the next chapter.

Recap

- After independence, India envisaged an economic system which combines the best features of socialism and capitalism—this culminated in the mixed economy model.
- All the economic planning has been formulated through five year plans.
- Common goals of five year plans are growth, modernisation, self-sufficiency and equity.
- The major policy initiatives in agriculture sector were land reforms and green revolution. These initiatives helped India to become self-sufficient in food grains production.
- The proportion of people depending on agriculture did not decline as expected.
- Policy initiatives in the industrial sector raised its contribution to GDP.
- One of the major drawbacks in the industrial sector was the inefficient functioning of the public sector as it started incurring losses leading to drain on the nation's limited resources.

EXERCISES

1. Define a plan.
2. Why did India opt for planning?
3. Why should plans have goals?
4. What are miracle seeds?
5. What is marketable surplus?
6. Explain the need and type of land reforms implemented in the agriculture sector.
7. What is Green Revolution? Why was it implemented and how did it benefit the farmers? Explain in brief.
8. Explain 'growth with equity' as a planning objective.
9. Does modernisation as a planning objective create contradiction in the light of employment generation? Explain.
10. Why was it necessary for a developing country like India to follow self-reliance as a planning objective?
11. What is sectoral composition of an economy? Is it necessary that the service sector should contribute maximum to GDP of an economy? Comment.
12. Why was public sector given a leading role in industrial development during the planning period?
13. Explain the statement that green revolution enabled the government to procure sufficient food grains to build its stocks that could be used during times of shortage.
14. While subsidies encourage farmers to use new technology, they are a huge burden on government finances. Discuss the usefulness of subsidies in the light of this fact.
15. Why, despite the implementation of green revolution, 65 per cent of our population continued to be engaged in the agriculture sector till 1990?
16. Though public sector is very essential for industries, many public sector undertakings incur huge losses and are a drain on the economy's resources. Discuss the usefulness of public sector undertakings in the light of this fact.

17. Explain how import substitution can protect domestic industry.

18. Why and how was private sector regulated under the IPR 1956?

19. Match the following:

1. Prime Minister	A. Seeds that give large proportion of output
2. Gross Domestic Product	B. Quantity of goods that can be imported
3. Quota	C. Chairperson of the planning commission
4. Land Reforms	D. The money value of all the final goods and services produced within the economy in one year
5. HYV Seeds	E. Improvements in the field of agriculture to increase its productivity
6. Subsidy	F. The monetary assistance given by government for production activities.

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UNIT
II

Economic Reforms Since 1991

After forty years of planned development, India has been able to achieve a strong industrial base and became self-sufficient in the production of food grains. Nevertheless, a major segment of the population continues to depend on agriculture for its livelihood. In 1991, a crisis in the balance of payments led to the introduction of economic reforms in the country. This unit is an appraisal of the reform process and its implications for India.

3

LIBERALISATION, PRIVATISATION AND GLOBALISATION: AN APPRAISAL

After studying this chapter, the learners will

- understand the background of the reform policies introduced in India in 1991
- understand the mechanism through which reform policies were introduced
- comprehend the process of globalisation and its implications for India
- be aware of the impact of the reform process in various sectors.

> ***There is a consensus in the world today that economic development is not all and the GDP is not necessarily a measure of progress of a society.***
>
> ***K.R. Narayanan***

3.1 Introduction

You have studied in the previous chapter that, since independence, India followed the mixed economy framework by combining the advantages of the market economic system with those of the planned economic system. Some scholars argue that, over the years, this policy resulted in the establishment of a variety of rules and laws which were aimed at controlling and regulating the economy and instead ended up hampering the process of growth and development. Others state that India, which started its developmental path from near stagnation, has since been able to achieve growth in savings, developed a diversified industrial sector which produces a variety of goods and has experienced sustained expansion of agricultural output which has ensured food security.

In 1991, India met with an economic crisis relating to its external debt — the government was not able to make repayments on its borrowings from abroad; **foreign exchange reserves**, which we generally maintain to import petrol and other important items, dropped to levels that were not sufficient for even a fortnight. The crisis was further compounded by rising prices of essential goods. All these led the government to introduce a new set of policy measures which changed the direction of our developmental strategies. In this chapter, we will look at the background of the crisis, measures that the government has adopted and their impact on various sectors of the economy.

3.2 Background

The origin of the financial crisis can be traced from the inefficient management of the Indian economy in the 1980s. We know that for implementing various policies and its general administration, the government generates funds from various sources such as taxation, running of public sector enterprises etc. When expenditure is more than income, the government borrows to finance the **deficit** from banks and also from people within the country and from international **financial institutions**. When we import goods like petroleum, we pay in dollars which we earn from our exports.

Development policies required that even though the revenues were very low, the government had to overshoot its revenue to meet problems like unemployment, poverty and population explosion. The continued spending on development programmes of the government did not generate additional revenue. Moreover, the government was not

able to generate sufficiently from internal sources such as taxation. When the government was spending a large share of its income on areas which do not provide immediate returns such as the social sector and defence, there was a need to utilise the rest of its revenue in a highly efficient manner. The income from public sector undertakings was also not very high to meet the growing expenditure. At times, our **foreign exchange**, borrowed from other countries and international financial institutions, was spent on meeting consumption needs. Neither was an attempt made to reduce such profligate spending nor sufficient attention was given to boost exports to pay for the growing imports.

In the late 1980s, government expenditure began to exceed its revenue by such large margins that it became unsustainable. Prices of many essential goods rose sharply. Imports grew at a very high rate without matching growth of exports. As pointed out earlier, foreign exchange reserves declined to a level that was not adequate to finance imports for more than two weeks. There was also not sufficient foreign exchange to pay the interest that needs to be paid to international lenders.

India approached the **International Bank for Reconstruction and Development (IBRD)**, popularly known as **World Bank** and the **International Monetary Fund (IMF)**, and received $7 billion as loan to manage the crisis. For availing the loan, these international agencies expected India to liberalise and open up the economy by removing restrictions on the private sector, reduce the role of the government in many areas and remove trade restrictions.

India agreed to the conditionalities of World Bank and IMF and announced the **New Economic Policy (NEP)**. The NEP consisted of wide ranging economic reforms. The thrust of the policies was towards creating a more competitive environment in the economy and removing the barriers to entry and growth of firms. This set of policies can broadly be classified into two groups: the stabilisation measures and the structural reform measures. Stabilisation measures are short-term measures, intended to correct some of the weaknesses that have developed in the **balance of payments** and to bring **inflation** under control. In simple words, this means that there was a need to maintain sufficient foreign exchange reserves and keep the rising prices under control. On the other hand, structural reform policies are long-term measures, aimed at improving the efficiency of the economy and increasing its international competitiveness by removing the rigidities in various segments of the Indian economy. The government initiated a variety of policies which fall under three heads viz., liberalisation, privatisation and globalisation. The first two are policy

strategies and the last one is the outcome of these strategies.

3.3 Liberalisation

As pointed out in the beginning, rules and laws which were aimed at regulating the economic activities became major hindrances in growth and development. Liberalisation was introduced to put an end to these restrictions and open up various sectors of the economy. Though a few liberalisation measures were introduced in 1980s in areas of industrial licensing, **export-import policy**, technology upgradation, **fiscal policy** and foreign investment, reform policies initiated in 1991 were more comprehensive. Let us study some important areas such as the industrial sector, financial sector, tax reforms, **foreign exchange markets** and trade and investment sectors which received greater attention in and after 1991.

Deregulation of Industrial Sector: In India, regulatory mechanisms were enforced in various ways (i) industrial licensing under which every entrepreneur had to get permission from government officials to start a firm, close a firm or to decide the amount of goods that could be produced (ii) private sector was not allowed in many industries (iii) some goods could be produced only in small scale industries and (iv) controls on price fixation and distribution of selected industrial products.

The reform policies introduced in and after 1991 removed many of these restrictions. Industrial licensing was abolished for almost all but product categories — alcohol, cigarettes, hazardous chemicals industrial explosives, electronics, aerospace and drugs and pharmaceuticals. The only industries which are now reserved for the public sector are defence equipments, atomic energy generation and railway transport. Many goods produced by small scale industries have now been **dereserved**. In many industries, the market has been allowed to determine the prices.

Financial Sector Reforms: Financial sector includes financial institutions such as commercial banks, investment banks, **stock exchange** operations and foreign exchange market. The financial sector in India is controlled by the Reserve Bank of India (RBI). You may be aware that all the banks and other financial institutions in India are controlled through various norms and regulations of the RBI. The RBI decides the amount of money that the banks can keep with themselves, fixes interest rates, nature of lending to various sectors etc. One of the major aims of financial sector reforms is to reduce the role of RBI from regulator to facilitator of financial sector. This means that the financial sector may be allowed to take decisions on many matters without consulting the RBI.

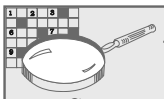
The reform policies led to the establishment of private sector banks, Indian as well as foreign. Foreign investment limit in banks was raised to around 50 per cent. Those banks which fulfil certain conditions have been given freedom to set up new branches without the approval of the RBI and rationalise their existing branch networks. Though banks have been given permission to generate resources from India and abroad, certain aspects have been retained with the RBI to safeguard the interests of the account-holders and the nation. **Foreign Institutional Investors (FII)** such as merchant bankers, mutual funds and pension funds are now allowed to invest in Indian financial markets.

Tax Reforms: Tax reforms are concerned with the reforms in government's taxation and public expenditure policies which are collectively known as its **fiscal policy**. There are two types of taxes: direct and indirect. **Direct taxes** consist of taxes on incomes of individuals as well as profits of business enterprises. Since 1991, there has been a continuous reduction in the taxes on individual incomes as it was felt that high rates of income tax were an important reason for tax evasion. It is now widely accepted that moderate rates of income tax encourage savings and voluntary disclosure of income. The rate of **corporation tax**, which was very high earlier, has been gradually reduced. Efforts have also been made to reform the **indirect taxes**, taxes levied on commodities, in order to facilitate the establishment of a common national market for goods and commodities. Another component of reforms in this area is simplification. In order to encourage better compliance on the part of taxpayers many procedures have been simplified and the rates also substantially lowered.

Foreign Exchange Reforms: The first important reform in the external sector was made in the foreign exchange market. In 1991, as an immediate measure to resolve the balance of payments crisis, the rupee was **devalued** against foreign currencies. This led to an increase in the inflow of foreign exchange. It also set the tone to free the determination of rupee value in the foreign exchange market from government control. Now, more often than not, markets determine exchange rates based on the demand and supply of foreign exchange.

Trade and Investment Policy Reforms: Liberalisation of trade and investment regime was initiated to increase international competitiveness of industrial production and also foreign investments and technology into the economy. The aim was also to promote the efficiency of the local industries and the adoption of modern technologies.

In order to protect domestic industries, India was following a regime of **quantitative restrictions** on imports. This was encouraged through tight control over imports and by keeping the **tariffs** very high. These policies reduced efficiency and competitiveness which led to slow growth of the manufacturing sector. The trade policy reforms aimed at (i) dismantling of quantitative restrictions on imports and exports (ii) reduction of tariff rates and (iii) removal of licensing procedures for imports. **Import licensing** was abolished except in case of hazardous and environmentally sensitive industries. Quantitative restrictions on imports of manufactured consumer goods and agricultural products were also fully removed from April 2001. **Export duties** have been removed to increase the competitive position of Indian goods in the international markets.



Work These Out

- Give an example each of nationalised bank, private bank, private foreign bank, FII and a mutual fund.
- Visit a bank in your locality with your parents. Observe and find out the functions it performs. Discuss the same with your classmates and prepare a chart on it.
- Classify the following as direct and indirect taxes: sales tax, custom duties, property tax, death duties, VAT, income tax.
- Find out from your parents if they pay taxes. If yes, why do they do so and how?
- Do you know that for a very long time countries used to keep silver and gold as reserves to make payments abroad? Find out in what form do we keep our foreign exchange reserves and find out from newspapers, magazines and the Economic Survey how much foreign exchange reserves we have today. Also find the foreign currency of the following countries and its rupee exchange rate

Country	*Currency*	*Value of 1(one) unit of foreign currency in Indian rupee*
U.S.A.		
U.K.		
Japan		
China		
Korea		
Singapore		
Germany		

3.4 Privatisation

It implies shedding of the ownership or management of a government owned enterprise. Government companies can be converted into private companies in two ways (i) by withdrawal of the government from ownership and management of public sector companies and or (ii) by outright sale of public sector companies.

Privatisation of the public sector undertakings by selling off part of the equity of PSUs to the public is known as **disinvestment**. The purpose of the sale, according to the government, was mainly to improve financial discipline and facilitate modernisation. It was also envisaged that private capital and managerial capabilities could be effectively utilised to improve the performance of the PSUs. The

Box 3.1: *Navaratnas* and Public Enterprise Policies

You must have read in your childhood about the famous *Navaratnas* or Nine Jewels in the Imperial Court of King Vikramaditya who were eminent persons of excellence in the fields of art, literature and knowledge. In 1996, in order to improve efficiency, infuse professionalism and enable them to compete more effectively in the liberalised global environment, the government chose nine PSUs and declared them as *navaratnas.* They were given greater managerial and operational autonomy, in taking various decisions to run the company efficiently and thus increase their profits. Greater operational, financial and managerial autonomy had also been granted to 97 other profit-making enterprises referred to as *mini ratnas.*

The first set of *navaratna* companies included Indian Oil Corporation Ltd (IOC), Bharat Petroleum Corporation Ltd (BPCL), Hindustan Petroleum Corporation Ltd (HPCL), Oil and Natural Gas Corporation Ltd (ONGC), Steel Authority of India Ltd (SAIL), Indian Petrochemicals Corporation Ltd (IPCL), Bharat Heavy Electricals Ltd (BHEL), National Thermal Power Corporation (NTPC) and Videsh Sanchar Nigam Ltd (VSNL). Later, two more PSUs—Gas Authority of India Limited (GAIL) and Mahanagar Telephone Nigam Ltd (MTNL)—were also given the same status.

Many of these profitable PSUs were originally formed during the 1950s and 1960s when self-reliance was an important element of public policy. They were set up with the intention of providing infrastructure and direct employment to the public so that quality end-product reaches the masses at a nominal cost and the companies themselves were made accountable to all stakeholders.

The granting of *navaratna* status resulted in better performance of these companies. Scholars state that instead of facilitating *navaratnas* in their expansion and enabling them to become global players, the government partly privatised them through disinvesment. Of late, the government has decided to retain the *navaratnas* in the public sector and enable them to expand themselves in the global markets and raise resources by themselves from financial markets.

Work These Out

- Some scholars refer to disinvestment as the wave of privatisation spreading all over the world to improve the performance of public sector enterprises whereas others call it as outright sale of public property to the vested interests. What do you think?
- Prepare a poster which contains 10-15 news clippings which you consider as important and relating to *navaratnas* from newspapers. Also collect the logos and advertisements of these PSUs. Put these on the notice board and discuss them in the classroom.
- Do you think only loss making companies should be privatised? Why?
- Losses incurred by public sector undertakings are to be met out of the public budget — do you agree with this statement? Discuss.

government envisaged that privatisation could provide strong impetus to the inflow of FDI.

The government has also made attempts to improve the efficiency of PSUs by giving them autonomy in taking managerial decisions. For instance, some PSUs have been granted special status as *navaratnas* and *mini ratnas* (see Box 3.1).

3.5 Globalisation

Globalisation is the outcome of the policies of liberalisation and privatisation. Although globalisation is generally understood to mean integration of the economy of the country with the world economy, it is a complex phenomenon. It is an outcome of the set of various policies that are aimed at transforming the world towards greater interdependence and integration. It involves creation of networks and activities transcending economic, social and geographical boundaries. Globalisation attempts to establish links in such a way that the happenings in India can be influenced by events happening miles away. It is turning the world into one whole or creating a borderless world.

Outsourcing: This is one of the important outcomes of the globalisation process. In outsourcing, a company hires regular service from external sources, mostly from other countries, which was previously provided internally or from within the country (like legal advice, computer service, advertisement, security — each provided by respective departments of the company). As a form of economic activity, outsourcing has intensified, in recent times, because of the growth of fast modes of communication, particularly the growth of Information Technology (IT). Many of the services such as voice-based business processes (popularly known as BPO or call centres), record keeping,

Box 3.2: Global Footprint!

Owing to globalisation, you might find many Indian companies expanding their wings to many other countries. In 2000, Tata Tea surprised the world by acquiring the UK based Tetley, the inventor of the tea bag, for Rs 1,870 crore. In the year 2004, Tata steel bought the Singapore-based Nat steel for Rs 1,245 crore and Tata Motors completed the buyout of Daewoo's heavy commercial vehicle unit in South Korea for Rs 448 crore. Now VSNL is acquiring Tyco's undersea cable network for Rs 572 crore, which will control over 60,000 km undersea cable network across three continents. The Tatas also plan to invest Rs 8,800 crore in fertiliser, steel and power plants in Bangladesh.

Source: *Business Today, 22 May 2005.*

accountancy, banking services, music recording, film editing, book transcription, clinical advice or even teaching are being outsourced by companies in developed countries to India. With the help of modern telecommunication links including the Internet, the text, voice and visual data in respect of these services is digitised and transmitted in real time over continents and national boundaries. Most multinational corporations, and even small companies, are outsourcing their services to India where they can be availed at a cheaper cost with reasonable degree of skill and accuracy. The low wage rates and availability of skilled manpower in India have made it a destination for global outsourcing in the post-reform period.

World Trade Organisation (WTO): The WTO was founded in 1995 as the successor organisation to the General Agreement on Trade and Tariff (GATT). GATT was established in 1948 with 23 countries as the global trade organisation to administer all **multilateral trade agreements** by providing equal opportunities to all countries in the international market for trading purposes. WTO is expected to establish a rule-based trading regime in which nations cannot place arbitrary restrictions on trade. In addition, its purpose is also to enlarge

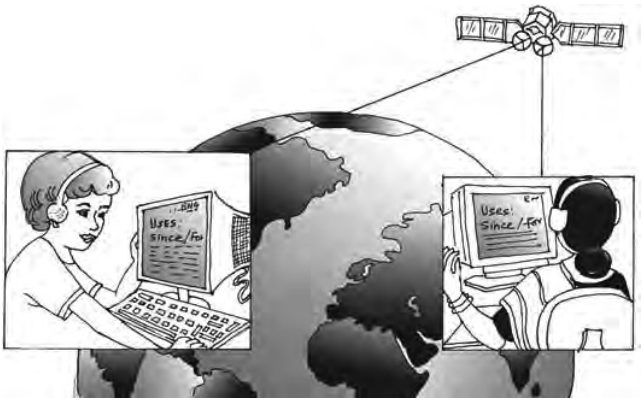


Fig. 3.1 *Outsourcing: a new employment opportunity in big cities*

Work These Out

- Many scholars argue that globalisation is a threat as it reduces the role of the state in many sectors. Some counter argue that it is an opportunity as it opens up markets to compete in and capture. Debate in the classroom.
- Prepare a chart consisting of a list of five companies that have BPO services in India, along with their turnover.
- Read this excerpt of a news item from a daily newspaper describing something that is now becoming increasingly common.

  "On a morning, a few minutes before 7 A.M., Greeshma sat in front of her computer with her headset on and said in accented English 'Hello, Daniella'. Seconds later, she gets the reply, 'Hello, Greeshma'. The two chatted excitedly before Greeshma said that 'we will work on pronouns today'. Nothing unusual about this chat except that Greeshma, 22, was in Kochi and her student Daniella, 13, was at her home in Malibu, California. Using a simulated whiteboard on their computers, connected by the Internet, and a copy of Daniella's textbook in front of Greeshma, she guides the teenager through the intricacies of nouns, adjectives and verbs. Greeshma, who grew up speaking Malayalam, was teaching Daniella English grammar, comprehension and writing."

  - ✓ How has this become possible? Why can't Daniella get lessons in her own country? Why is she getting English lessons from India, where English is not the mother tongue?
  - ✓ India is benefiting from liberalisation and integration of world markets. Do you agree?
- Is employment in call centres sustainable? What kinds of skills should people working in call centres acquire to get a regular income?
- If the multinational companies outsource many services to countries like India because of cheap manpower, what will happen to people living in the countries where the companies are located? Discuss.

production and trade of services, to ensure optimum utilisation of world resources and to protect the environment. The WTO agreements cover trade in goods as well as services to facilitate international trade (**bilateral** and multilateral) through removal of tariff as well as **non-tariff barriers** and providing greater market access to all member countries.

As an important member of WTO, India has been in the forefront of framing fair global rules, regulations and safeguards and advocating the interests of the developing world. India has kept its commitments towards liberalisation of trade, made in the WTO, by removing quantitative restrictions on imports and reducing tariff rates.

TABLE 3.1

Growth of GDP and Major Sectors (in %)

Sector	*1980-91*	*1992-2001*	*2002-07 (Tenth Plan Projected)*
Agriculture	3.6	3.3	4.0
Industry	7.1	6.5	9.5
Services	6.7	8.2	9.1
GDP	**5.6**	**6.4**	**8.0**

Source: *Tenth Five Year Plan*

Some scholars question the usefulness of India being a member of the WTO, as a major volume of international trade occurs among the developed nations. They also say that while developed countries file complaints over agricultural subsidies given in their countries, developing countries feel cheated as they are forced to open up their markets for developed countries but are not allowed access to the markets of developed countries. What do you think?

Fig. 3.2 *IT Industry is seen as a major contributor to India's exports*

3.6 Indian Economy During Reforms: an Assessment

The reform process has completed one and a half decades since its introduction. Let us now look at the performance of the Indian economy during this period. In economics, growth of an economy is measured by the Gross Domestic Product. Look at Table 3.1. The table shows the growth of GDP in different periods. The growth of GDP increased from 5.6 per cent during 1980-91 to 6.4 per cent during 1992-2001. This shows that there has been an increase in the overall GDP growth in the reform period. During the reform period, the growth of agriculture and industrial sectors has declined whereas the growth of service sector has gone up. This indicates that the growth is mainly driven by the growth in the service sector. The Tenth Plan (2002-07) has projected the GDP growth rate at 8 per cent. In order to achieve such a high growth rate, the agriculture, industrial and service sectors have to grow at the rates of 4, 9.5 and 9.1 percentage points respectively. However, some scholars raise apprehensions over the projection of such high rates of growth as unsustainable.

The opening up of the economy has led to rapid increase in foreign direct

investment and foreign exchange reserves. The foreign investment, which includes **foreign direct investment** and foreign institutional investment, has increased from about US $ 100 million in 1990-91 to US $ 150 billion in 2003-04. There has been an increase in the foreign exchange reserves from about US $ 6 billion in 1990-91 to US $ 125 billion in 2004-05. At present, India is the sixth largest foreign exchange reserve holder in the world.

India is seen as a successful exporter of auto parts, engineering goods, IT software and textiles in the reform period. Rising prices have also been kept under control.

On the other hand, the reform process has been widely criticised for not being able to address some of the basic problems facing our economy esepecially in the areas of employment, agriculture, industry, infrastructure development and fiscal management.

Growth and Employment: Though the GDP growth rate has increased in the reform period, scholars point out that the reform-led growth has not generated sufficient employment

Work These Out

- In the previous chapter, you might have studied about subsidies in various sectors including agriculture. Some scholars argue that subsidy in agriculture should be removed to make the sector internationally competitive. Do you agree? If so, how can it be done? Discuss in class.
- Read the following passage and discuss in class.

  Groundnut is a major oilseed crop in Andhra Pradesh. Mahadeva, who was a farmer in Anantpur district of Andhra Pradesh, used to spend Rs 1,500 for growing groundnut on his plot of half an acre. The cost included expenditure on raw materials (seeds, fertilisers etc.), labour, bullock power and machinery used. On an average, Mahadeva used to get two quintals of groundnut, and each quintal was sold for Rs 1,000. Mahadeva, thus, was spending Rs 1,500 and getting an income of Rs 2,000, Anantpur district is a drought-prone area. As a result of economic reforms, the government did not undertake any major irrigation project. Recently, groundnut crop in Anantpur is facing problems due to crop disease. Research and extension work has gone down due to lower government expenditure. Mahadeva and his friends brought this matter repeatedly to the notice of the concerned authorities, but failed. Subsidy was reduced on materials (seeds, fertilisers) which increased Mahadeva's cost of cultivation. Moreover, the local markets were flooded with cheap imported edible oils, which was a result of removal of restriction on imports. Mahadeva was not able to sell his groundnut in the market as he was not getting the price to cover his cost.

  Is a farmer like Mahadeva better off after reforms? Discuss in the class.

opportunities in the country. You will study the link between different aspects of employment and growth in the next unit.

Reforms in Agriculture: Reforms have not been able to benefit agriculture, where the growth rate has been decelerating.

Public investment in agriculture sector especially in infrastructure, which includes irrigation, power, roads, market linkages and research and extension (which played a crucial role in the Green Revolution), has been reduced in the reform period. Further, the removal of fertiliser subsidy has led to increase in the cost of production, which has severely affected the small and marginal farmers. Moreover, since the commencement of WTO, this sector has been experiencing a number of policy changes such as reduction in import duties on agricultural products, removal of minimum support price and lifting of quantitative restrictions on agricultural products; these have adversely affected Indian farmers as they now have to face increased international competition.

Moreover, because of export-oriented policy strategies in agriculture, there has been a shift from production for the domestic market towards production for the export market focusing on cash crops in lieu of production of food grains. This puts pressure on prices of food grains.

Reforms in Industry: Industrial growth has also recorded a slowdown. This is because of decreasing demand of industrial products due to various reasons such as cheaper imports, inadequate investment in infrastructure etc. In a globalised world, developing countries are compelled to open up their economies to greater flow of goods and capital from developed countries and rendering their industries vulnerable to imported goods. Cheaper imports have, thus, replaced the demand for domestic goods. Domestic manufacturers are facing competition from imports. The infrastructure facilities, including power supply, have remained inadequate due to lack of investment. Globalisation is, thus, often seen as creating conditions for the free movement of goods and services from foreign countries that adversely affect the local industries and employment opportunities in developing countries.

Moreover, a developing country like India still does not have the access to developed countries' markets because of high non-tariff barriers. For example, although all quota restrictions on exports of textiles and clothing have been removed from our side, U.S.A. has not removed their quota restriction on import of textiles from India and China!

Disinvestment: Every year, the government fixes a target for disinvestment of PSUs. For instance, in 1991-92, it was targeted to mobilise Rs 2,500 crore through disinvestment. The government was able to mobilise Rs 3,040 crore more

than the target. In 1998-99, the target was Rs 5,000 crore whereas the achievement was Rs 5,400 crore. Critics point out that the assets of PSUs have been undervalued and sold to the private sector. This means that there has been a substantial loss to the government. Moreover, the proceeds from disinvestment were used to offset the shortage of government revenues rather than using it for the development of PSUs and building social infrastructure in the country.

Reforms and Fiscal Policies: Economic reforms have placed limits on the growth of public expenditure especially in social sectors. The tax reductions in the reform period, aimed at yielding larger revenue and to curb tax evasion, have not resulted in increase in tax revenue for the government. Also, the reform policies involving tariff reduction have curtailed the scope for raising revenue through customs duties. In order to attract foreign investment, tax incentives were provided to foreign investors which further reduced the scope for raising tax revenues. This has a negative impact on developmental and welfare expenditures.

3.7 Conclusion

The process of globalisation through liberalisation and privatisation policies has produced positive as well as negative results both for India and other countries. Some scholars argue that globalisation should be seen as an opportunity in terms of greater access to global markets, high technology and increased possibility of large industries of developing countries to become important players in the international arena.

Box 3.3: Siricilla Tragedy!

As a part of liberalisation, privatisation and globalisation, the government started to reform the power sector. The most important impact of these reforms has been a steep hike in power tariff. Since the powerlooms, on which a large number of industrial workers in cottage and small-scale sector depend, are driven by power energy, the impact of high tariff on them has been very serious. Further, while the power sector reforms have led to hike in tariffs, the power producers have failed in providing quality power to the powerloom industry. Since the wages of the powerloom workers are linked to the production of cloth, power-cut means cut in wages of weavers who were already suffering from hike in tariff. This led to a crisis in the livelihood of the weavers and fifty powerloom workers committed suicide in a small town called 'Siricilla' in Andhra Pradesh.

- Do you think the power tariff should not be raised?
- What would be your suggestions to improve the profitability of electricity producing companies?

On the contrary, the critics argue that globalisation is a strategy of the developed countries to expand their markets in other countries. According to them, it has compromised the welfare and identity of people belonging to poor countries. It has further been pointed out that market-driven globalisation has widened the economic disparities among nations and people.

Viewed from the Indian context, some studies have stated that the crisis that erupted in the early 1990s was basically an outcome of the deep-rooted inequalities in Indian society and the economic reform policies initiated as a response to the crisis by the government, with externally advised policy package, further aggravated the inequalities. Further, it has increased the income and quality of consumption of only high-income groups and the growth has been concentrated only in some select areas in the services sector such as telecommunication, information technology, finance, entertainment, travel and hospitality services, real estate and trade, rather than vital sectors such as agriculture and industry which provide livelihoods to millions of people in the country.

Recap

- The economy was facing problems of declining foreign exchange, growing imports without matching rise in exports and high inflation. India changed its economic policies in 1991 due to a financial crisis and pressure from international organisations like the World Bank and IMF.
- In the domestic economy, major reforms were undertaken in the industrial and financial sectors. Major external sector reforms included foreign exchange deregulations and import liberalisation.
- With a view to improving the performance of the public sector, there was a consensus on reducing its role and opening it up to the private sector. This was done through disinvestment and liberalisation measures.
- Globalisation is the outcome of the policies of liberalisation and privatisation. It means an integration of the economy of the country with the world economy.
- Outsourcing is an emerging business activity.
- The objective of the WTO is to establish a rule based trade regime to ensure optimum utilisation of world resources.
- During the reforms, growth of agriculture and industry has gone down but the service sector has registered growth.
- Reforms have not benefited the agriculture sector. There has also been a decline in public investment in this sector.
- Industrial sector growth has slowed down due to availability of cheaper imports and lower investment.

EXERCISES

1. Why were reforms introduced in India?
2. How many countries are members of the WTO?
3. What is the most important function of RBI?
4. How was RBI controlling the commercial banks?
5. What do you understand by devaluation of rupee?
6. Distinguish between the following
   (i) Strategic and Minority sale
   (ii) Bilateral and Multi-lateral trade
   (iii) Tariff and Non-tariff barriers.
7. Why are tariffs imposed?
8. What is the meaning of quantitative restrictions?
9. Those public sector undertakings which are making profits should be privatised. Do you agree with this view? Why?
10. Do you think outsourcing is good for India? Why are developed countries opposing it?
11. India has certain advantages which makes it a favourite outsourcing destination. What are these advantages?
12. Do you think the *navaratna* policy of the government helps in improving the performance of public sector undertakings in India? How?
13. What are the major factors responsible for the high growth of the service sector?
14. Agriculture sector appears to be adversely affected by the reform process. Why?
15. Why has the industrial sector performed poorly in the reform period?
16. Discuss economic reforms in India in the light of social justice and welfare.

SUGGESTED ADDITIONAL ACTIVITIES

1. The table given below shows the GDP growth rate at 1993-94 prices. You have studied about the techniques of presentation of data in your *Statistics for Economics* course. Draw a time series line graph based on the data given in the table and interpret the same.

Year	*GDP Growth Rate (%)*
1991-92	1.3
1992-93	5.1
1993-94	5.9
1994-95	7.3
1996-97	7.8
1997-98	4.8
1998-99	6.5
2000-01	4.4
2001-02	5.8
2002-03	4.0

2. Observe around you — you will find State Electricity Boards (SEBs), BSES and many public and private organisations supplying electricity in a city and states. There are private buses on roads along side the goverment bus services and so on

   (i) What do you think about this dual system of the co-existence of public and private sectors?

   (ii) What are the merits and demerits of such a dual system? Discuss.

3. With the help of your parents and grandparents prepare a list of multinational companies that existed in India at the time of independence. Now put a (✓) mark against those which are still growing and a ( ) against those which do not exist any more. Are there any companies whose names have changed? Find out the new names, the country of origin, nature of product, logo and prepare a chart for your class.

4. Give appropriate examples for the following

Nature of Product	*Name of a Foreign Company*
Biscuits	
Shoes	
Computers	
Cars	
TV and Refrigerators	
Stationery	

Now find out if these companies which are mentioned above existed in India before 1991 or came after the New Economic Policy. For this, take the help of your teacher, parents, grandparents and shopkeepers.

5. Collect a few relevant newspaper cuttings on meetings organised by WTO. Discuss the issues debated in these meetings and find out how the organisation facilitates world trade.

6. Was it necessary for India to introduce economic reforms at the behest of World Bank and International Monetary Fund? Was there no alternative for the government to solve the balance of payments crisis? Discuss in the classroom.

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UNIT III

Current Challenges Facing the Indian Economy

Some of the most challenging issues facing India today are poverty, development of rural India and building infrastructure. We are a billion-strong country today and our human capital is the biggest asset; it needs investment in health and education. We also need to understand the concept of employment and the need for creating more employment in our country. We will also look at the implications of development on our environment and call for sustainable development. There is a need to critically assess government initiatives in tackling all these issues each of which has been taken up separately in this unit.

4

POVERTY

After studying this chapter, the learners will

- understand the various attributes of poverty
- comprehend the diverse dimensions relating to the concept of poverty
- critically appreciate the way poverty is estimated
- appreciate and be able to assess existing poverty alleviation programmes.

> ***No society can surely be flourishing and happy, of which the far greater part of the members are poor and miserable.***
>
> ***Adam Smith***

4.1 Introduction

In previous chapters, you have studied the economic policies that India has taken in the last five and a half decades and the outcome of these policies with relation to the various developmental indicators. Providing minimum basic needs to the people and reduction of poverty have been the major aims of independent India. The pattern of development that the successive five year plans envisaged laid emphasis on the upliftment of the poorest of the poor (*Antyodaya*), integrating the poor into the mainstream and achieving a minimum standard of living for all.

While addressing the Constituent Assembly in 1947, Jawaharlal Nehru had said, "This achievement (Independence) is but a step, an opening of opportunity, to the great triumphs and achievements that await us... the ending of poverty and ignorance and disease and inequality of opportunity."

However we need to know where we stand today. Poverty is not only a challenge for India, as more than one-fifth of the world's poor live in India alone; but also for the world, where more than 260 million people are not able to meet their basic needs.

Poverty has many faces, which have been changing from place to place and across time, and has been described in many ways. Most often, poverty is a situation that people want to escape. So poverty is a call to action — for the poor and the wealthy alike — a call to change the world so that many more may have enough to eat, adequate shelter, access to education and health, protection from violence, and a voice in what happens in their communities.

To know what helps to reduce poverty, what works and what does not, what changes over time, poverty has to be defined, measured and studied — and even experienced. As poverty has many dimensions, it has to be looked at through a variety of indicators — levels of income and consumption, social indicators, and indicators of vulnerability to risks and of socio/political access.

4.2 Who are the Poor?

You would have noticed that in all localities and neighbourhoods, both in rural and urban areas, there are some of us who are poor and some who are rich. Read the story of Anu and Sudha. Their lives are examples of the two extremes (see Box 4.1). There are also people who belong to the many stages in between.

Push cart vendors, street cobblers, women who string flowers,

rag pickers, vendors and beggars are some examples of poor and vulnerable groups in urban areas. They possess few assets. They reside in *kutcha* hutments with walls made of baked mud and roofs made of grass, thatch, bamboo and wood. The poorest of them do not even have such dwellings. In rural areas many of them are landless. Even if some of them possess land, it is only dry or waste land. Many do not get to have even two meals a day. Starvation and hunger are the key features of the poorest households. The poor lack basic literacy and skills and hence have very limited economic opportunities. Poor people also face unstable employment.

Malnutrition is alarmingly high among the poor. Ill health, disability or serious illness makes them

Box 4.1: Anu and Sudha

Anu and Sudha were both born on the same day. Anu's mother and father were construction labourers and Sudha's father was a businessman and her mother a designer.

Anu's mother worked by carrying head loads of bricks until she went into labour. She then went behind the tool shed on the construction site and delivered her baby alone. She fed her child and then wrapped her in an old sari, made a cradle with a gunny sack, put little Anu in it and hung it from a tree. She hurried back to work as she was afraid she would lose her job. She hoped that Anu would sleep until evening.

Sudha was born in one of the best nursing homes in the city. She was thoroughly checked by doctors, she was bathed and dressed in clean soft clothes and placed in a crib next to her mother. Her mother fed her whenever she was hungry, hugged and kissed her and sang her to sleep. Her family and friends celebrated her arrival.

Anu and Sudha had very different childhoods. Anu learnt to look after herself at a very early age. She knew what hunger and deprivation were. She discovered how to pick food from the dustbin, how to keep warm during the winter, to find shelter in the monsoon and how to play with a piece of string, stones and twigs. Anu could not go to school as her parents were migrant workers who kept moving from city to city in search of work.

Anu loved to dance. Whenever she heard music she would improvise. She was very beautiful and her movements were graceful and evocative. Her dream was to dance on a stage some day. Anu could have become a great dancer but she had to begin work at the age of 12. She had to earn a living with her mother and father, building houses for the rich. Houses, she would never live in.

Sudha went to a very good play school where she learnt how to read, write and count. She went on excursions to the planetarium, museum and national parks. She later went to a very good school. She loved painting and started getting private lessons from a famous artist. She later joined a design school and became a well known painter.

physically weak. They borrow from money lenders who charge high rates of interest that lead them into chronic indebtedness. The poor are highly vulnerable. They are not able to negotiate their legal wages from employers and are exploited. Most poor households have no access to electricity. Their primary cooking fuel is firewood and cow dung cake. A large section of poor people do not even have access to safe drinking water. There is evidence of extreme gender inequality in the participation of gainful employment, education and in decision-making within the family. Poor women receive less care on their way to motherhood. Their children are less likely to survive or be born healthy.

Fig. 4.2 *Many poor families live in kutcha houses*

Scholars identify the poor on the basis of their occupation and ownership of assets. They state that the rural poor work mainly as landless agricultural labourers, cultivators with very small landholdings, landless labourers who are engaged in a variety of non-agricultural jobs and tenant cultivators with small land holdings. The urban poor are largely the overflow of the rural poor who had migrated to urban areas in search of alternative employment and livelihood, labourers who do a variety of casual jobs and the self-emloyed who sell a variety of things on roadsides and are engaged in various activities.

Fig. 4.1 *Majority of agricultural labourers are poor*

Box 4.2 : What is Poverty?

Two scholars, Shaheen Rafi Khan and Damian Killen, put the conditions of the poor in a nutshell: Poverty is hunger. Poverty is being sick and not being able to see a doctor. Poverty is not being able to go to school and not knowing how to read. Poverty is not having a job. Poverty is fear for the future, having food once in a day. Poverty is losing a child to illness, brought about by unclear water. Poverty is powerlessness, lack of representation and freedom.

What do you think?

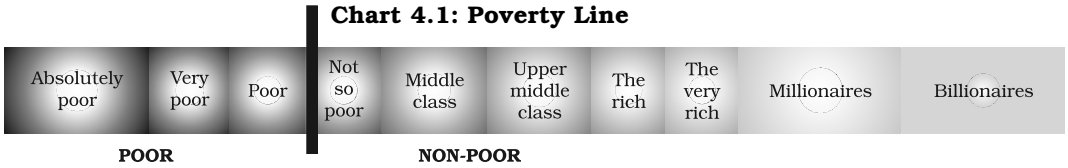
4.3 How are Poor People Identified?

If India is to solve the problem of poverty, it has to find viable and sustainable strategies to address the causes of poverty and design schemes to help the poor out of their situation. However, for these schemes to be implemented, the government needs to be able to identify who the poor are. For this there is need to develop a scale to measure poverty, and the factors that make up the criteria for this measurement or mechanism need to be carefully chosen.

In pre-independent India, Dadabhai Naoroji was the first to discuss the concept of a Poverty Line. He used the menu for a prisoner and used appropriate prevailing prices to arrive at what may be called 'jail cost of living'. However, only adults stay in jail whereas, in an actual society, there are children too. He, therefore, appropriately adjusted this cost of living to arrive at the poverty line. For this adjustment, he assumed that one-third population consisted of children and half of them consumed very little while the other half consumed half of the adult diet. This is how he arrived at the factor of three-fourths; (1/6)(Nil) + (1/6)(Half) + (2/3)(Full) = (3/4) (Full). The weighted average of consumption of the three segments gives the average poverty line, which comes out to be three-fourth of the adult jail cost of living.

In post-independent India, there have been several attempts to work out a mechanism to identify the number of poor in the country. For instance, in 1962, the Planning Commission formed a Study Group. In 1979, another body called the 'Task Force on Projections of Minimum Needs and Effective Consumption Demand' was formed. In 1989, an 'Expert Group' was constituted for the same purpose.

Chart 4.1: Poverty Line



Besides these bodies, many individual economists have also attempted to develop such a mechanism.

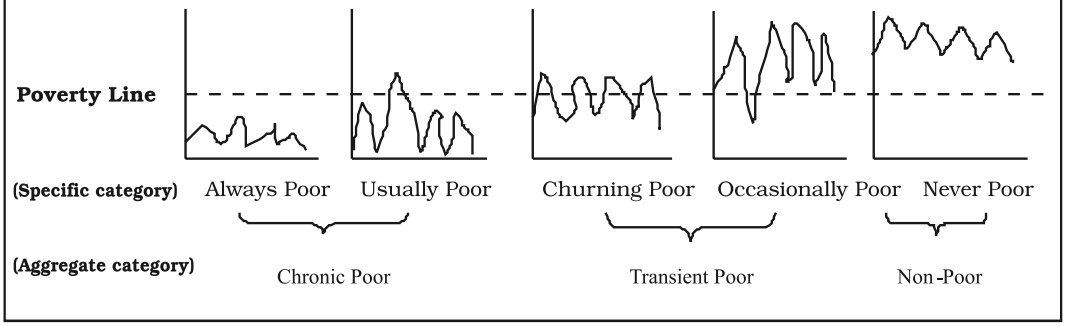
For the purpose of defining poverty we divide people into two categories; the poor and the non-poor and the poverty line separates the two. However, there are many kinds of poor; the absolutely poor, the very poor and the poor. Similarly there are various kinds of non-poor; the middle class, the upper middle class, the rich, the very rich and the absolutely rich. Think of this as a line or continuum from the very poor to the absolutely rich with the poverty line dividing the poor from the non-poor.

Categorising Poverty: There are many ways to categorise poverty. In one such way people who are **always poor** and those who are **usually poor** but who may sometimes have a little more money (example: casual workers) are grouped together as the **chronic poor**. Another group are the **churning poor** who regularly move in and out of poverty (example: small farmers and seasonal workers) and the **occasionally poor** who are rich most of the time but may sometimes have a patch of bad luck. They are called the **transient poor**. And then there are those who are **never poor** and they are the **non-poor** (Chart 4.2).

The Poverty Line: Now let us examine how to determine the poverty line. There are many ways of measuring poverty. One way is to determine it by the monetary value (per capita expenditure) of the minimum calorie intake that was estimated at 2,400 calories for a rural person and 2,100 for a person in the urban area. Based on this, in 1999-2000, the poverty line was defined for rural areas as consumption worth Rs 328 per person a month and for urban areas it was Rs 454.

Though the government uses Monthly Per Capita Expenditure (MPCE) as proxy for income of households to identify the poor, do you think this mechanism satisfactorily identifies the poor households in our country?

Chart 4.2: The Chronic Poor, Transient Poor and Non-Poor



Scholars state that a major problem with this mechanism is that it groups all the poor together and does not differentiate between the very poor and the other poor. Though this mechanism takes consumption expenditure on food and a few select items as proxy for income, economists question its basis. This mechanism is helpful in identifying the poor as a group to be taken care of by the government, but it would be difficult to identify who among the poor need help the most.

There are many factors, other than income and assets, which are associated with poverty; for instance, the accessibility to basic education, health care, drinking water and sanitation. The mechanism for determining the Poverty Line also does not take into consideration social factors that trigger and perpetuate poverty such as illiteracy, ill health, lack of access to resources, discrimination or lack of civil and political freedoms. The aim of poverty alleviation schemes should be to improve human lives by expanding the range of things that a person could be and could do, such as to be healthy and well-nourished, to be knowledgeable and participate in the life of a community. From this point of view, development is about removing the obstacles to the things that a person can do in life, such as illiteracy, ill health, lack of access to resources, or lack of civil and political freedoms.

Though the government claims that higher rate of growth, increase in agricultural production, providing employment in rural areas and economic reform packages introduced in the 1990s have resulted in a decline in poverty levels, economists raise doubts about the government's claim. They point out that the way the data are collected, items that are included in the consumption basket, methodology followed to estimate the poverty line and the number of poor are manipulated to arrive at the reduced figures of the number of poor in India.

Fig. 4.3 *Safe drinking water and sanitation are essential for all*

Due to various limitations in the official estimation of poverty, scholars have attempted to find alternative methods. For instance, Amartya Sen, noted Nobel Laureate, has developed an index known as Sen Index. There are other tools such as Poverty Gap Index and Squared Poverty Gap. You will learn about these tools in higher classes.

Work These Out

- In Sections 4.2 and 4.3, you will notice that the poor are identified not only with income and expenditure related indicators but also with many other items such as access to land, housing, education, health, sanitation. Also to be considered is discriminatory practices. Discuss how an alternative poverty line could be constructed in such a way that it includes all the other indicators.
- On the basis of the given definition for poverty line, find out whether people who work as domestic help, *dhobies* and newspaper vendors etc. in your locality/neighbourhood are above the poverty line or not.

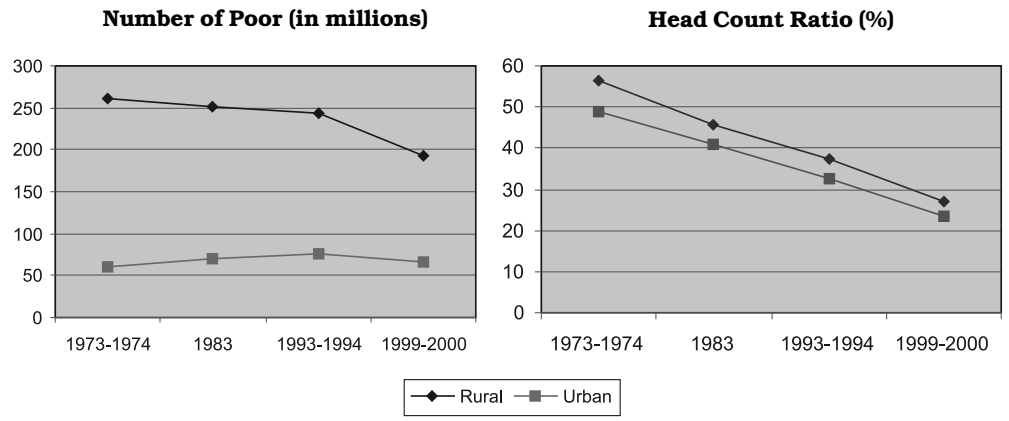
4.4 The Number of Poor in India

When the number of poor is estimated as the proportion of people below the poverty line, it is known as 'Head Count Ratio'.

You might be interested in knowing the total number of poor persons residing in India. Where do they reside and has their number or proportion declined over the years or not? When such a comparative analysis of poor people is made in terms of ratios and percentages, we will have an idea of different levels of poverty of people and their distribution; between states and over time.

The official data on poverty is made available to the public by the Planning Commission. It is estimated on the basis of consumption expenditure data collected by the National Sample Survey Organisation (NSSO). Chart 4.3 shows the number of poor and their

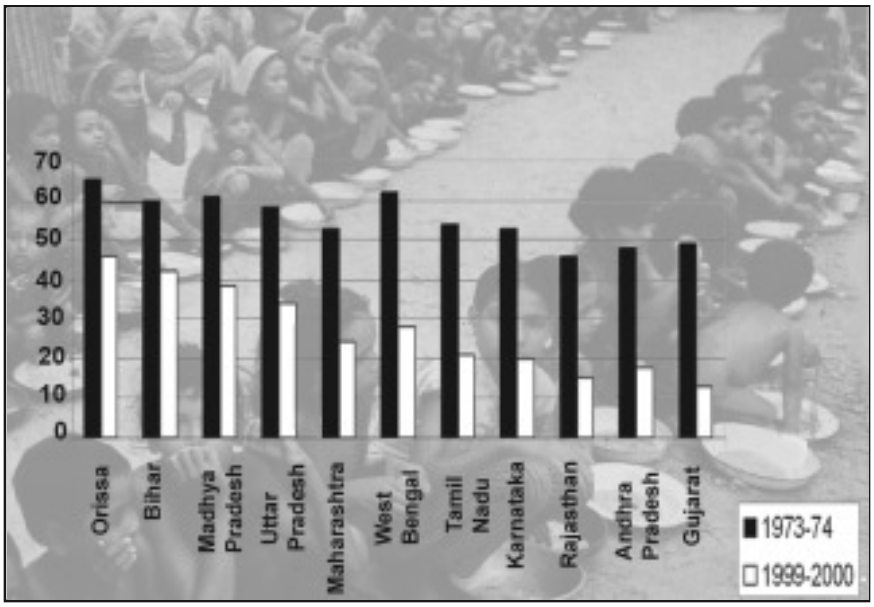
Chart 4.3: Trends in Poverty in India, 1973–2000



proportion to the population in India for the years 1973-2000. In 1973-74, more than 321 million people were below the poverty line. In 1999-2000, this number has come down to about 260 million. In terms of proportion, in 1973-74, about 55 per cent of the total population was below the poverty line. In 1999-2000, it has fallen to 26 per cent. In 1973-74, more than 80 per cent of the poor resided in rural areas and in 1999-2000, this has come down to about 75 per cent. This means that more than three-fourth of the poor in India reside in villages. Also poverty, which was prevailing predominantly in rural areas, has shifted to urban areas.

In the 1990s, the absolute number of poor in rural areas had declined whereas the number of their urban counterparts increased marginally. The poverty ratio declined continuously for both urban and rural areas. From Chart 4.3, you will notice that during 1973-2000, there has been a decline in the number of poor and their proportion but the nature of decline in the two parameters is not encouraging. The ratio is declining much slower than the absolute number of poor in the country. You will also notice that the gap between the absolute number of poor in rural and urban areas did not narrow down until the early 1990s whereas in the case of

Chart 4.4: Population Below Poverty Line in Some Large States, 1973-2000 (%)



Note: *Uttar Pradesh includes the present Uttaranchal; Madhya Pradesh includes Chhattisgarh and Bihar includes Jharkhand*

ratio the gap has remained the same until 1999-2000.

The state level trends in poverty are shown in Chart 4.4. It reveals that five states — Uttar Pradesh, Bihar, Madhya Pradesh, West Bengal and Orissa — account for about 70 per cent of India's poor. You will also notice that during 1973-74, about half the population in most of these large states was living below the poverty line. In 1999-2000, only two states — Bihar and Orissa — were left near that same level. Though they also reduced their share of poor, compared to other states, their success is marginal. If we look at Gujarat, it reduced its people below the poverty line from 48 per cent to 15 per cent during 1973-2000. During this period, West Bengal has been just as successful; from nearly two-third, i.e. 63 per cent of the population below the poverty line the same was reduced to about 27 per cent.

4.5 What Causes Poverty?

Poverty is explained by individual circumstances and/or characteristics of poor people. Some examples are (i)low levels of education and skills (ii) infirmity, ill health, sickness (iii) discrimination. These can be caused as a result of (i) social, economic and political inequality (ii) social exclusion (iii) unemployment (iv) indebtedness (v) unequal distribution of wealth. Aggregate poverty is just the sum of individual poverty. Poverty is also explained by general, economy-wide problems, such as (i) low capital formation (ii) lack of infrastructure (iii) lack of demand (iv) pressure of population (v) lack of social/welfare nets.

In Chapter 1 you have read about the British rule in India. Although the final impact of the British rule on Indian living standards is still being debated, there is no doubt that there was a substantial negative impact on the Indian economy and standard of living of the people. There was substantial de-industrialisation in India under the British rule. Imports of manufactured cotton cloth from Lancashire in England displaced much local production, and India reverted to being an exporter of cotton yarn, not cloth.

As over 70 per cent of Indians were engaged in agriculture throughout the British Raj period, the impact on that sector was more important on living standards than anything else. British policies involved sharply raising rural taxes that enabled merchants and moneylenders to become large landowners. Under the British, India began to export food grains and, as a result, as many as 26 million people died in famines between 1875 and 1900.

Britain's main goals from the Raj were to provide a market for British exports, to have India service its debt payments to Britain, and for India to provide manpower for the British imperial armies.

The British Raj impoverished millions of people in India. Our natural resources were plundered, our industries worked to produce goods at low prices for the British and our food grains were exported. Many died due to famine and hunger. In 1857-58, anger at the overthrow of many local leaders, extremely high taxes imposed on peasants, and other resentments boiled over in a revolt against British rule by the *sepoys*, Indian troops commanded by the British.

Fig. 4.4 *Low quality self-employment sustains poverty*

Even today agriculture is the principal means of livelihood and land is the primary asset of rural people; ownership of land is an important determinant of material well-being and those who own some land have a better chance to improve their living conditions.

Since independence, the government has attempted to redistribute land and has taken land from those who have large amounts to distribute it to those who do not have any land, but work on the land as wage labourers. However, this move was successful only to a limited extent as large sections of agricultural workers were not able to farm the small holdings that they now possessed as they did not have either money (assets) or skills to make the land productive and the land holdings were too small to be viable.

A large section of the rural poor in India are the small farmers. The land that they have is, in general, less fertile and dependent on rains. Their survival depends on subsistence crops and sometimes on livestock. With the rapid growth of population and without alternative sources of employment, the per-head availability of land for cultivation has steadily declined leading to fragmentation of land holdings. The income from these small land holdings is not sufficient to meet the family's basic requirements.

You must have heard about farmers committing suicide due to their inability to pay back the loans that they have taken for cultivation and other domestic needs as their crops have failed due to drought or other natural calamities (see Box 4.3).

The scheduled castes and scheduled tribes are not able to participate in the emerging employment opportunities in different sectors of the

Fig. 4.5 *Quality employment is still a dream for the poor*

urban and rural economy as they do not have the necessary knowledge and skills to do so.

The urban poor in India are largely the overflow of the rural poor who migrate to urban areas in search of employment and a livelihood. Industrialisation has not been able to absorb all these people. Most of the urban poor are either unemployed or intermittently employed as casual labourers. Casual labourers are among the most vulnerable in society as they have no job security, no assets, limited skills, sparse opportunities and no surplus to sustain them.

Poverty is, therefore, also closely related to nature of employment. Unemployment or under employment and the casual and intermittent nature of work in both rural and urban areas that compels indebtedness, in turn, reinforces poverty. Indebtedness is one of the significant factors of poverty.

A steep rise in the price of food grains and other essential goods, at

Work These Out

- When you go to the market, or visit religious places and historical monuments you may often find women begging with their children. Spare a few moments and speak to a few of them. Collect details about what made them to take up this activity, where they live with their family members, number of meals they are able to consume in a day, whether they possess any physical assets and why they could not take up a job. Discuss the details that you have collected in the classroom.
- You will notice many poor households as described above in your own locality or neighbourhood. Choose two or three such households and develop their family profile which can include the details of occupation, literacy level, ownership of assets and other information. Discuss them in class.
- List the activities of people in rural and urban areas separately. You may also list the activities of the non-poor. Compare the two and discuss in the classroom why the poor are unable to take up such activities.

Box 4.3: Distress Among Cotton Farmers

Many small land owning farmers and farming households and weavers are descending into poverty due to globalisation related shock and lack of perceived income earning opportunities in relatively well performing states in India. Where households have been able to sell assets, or borrow, or generate income from alternative employment opportunities, the impact of such shocks may be transient. However, if the household has no assets to sell or no access to credit, or is able to borrow only at exploitative rates of interest and gets into a severe debt trap, the shocks can have long duration ramification in terms of pushing households below the poverty line. The worst form of this crisis is suicides. The count reached 3,000 in Andhra Pradesh alone and is rising. In December 2005, the Maharashtra government admitted that over 1,000 farmers have committed suicides in the state since 2001.

Shantabai, wife of Neelakanta Sitaram Khoke who committed suicide in Yavatma, Maharashtra

India has the largest area under cotton cultivation in the world covering 8,300 hectares in 2002–03. The low yield of 300 kg per hectare pushes it into third position in production. High production costs, low and unstable yields, decline in world prices, global glut in production due to subsidies by the U.S.A. and other countries, and opening up of the domestic market due to globalisation have increased the exposure of farmers and led to agrarian distress and suicides especially in the cotton belt of Andhra Pradesh and Maharashtra. The issue is not one of profits and higher returns but that of the livelihood and survival of millions of small and marginal farmers who are dependent on agriculture.

Scholars cite several factors that have led farmers to commit suicides (i) the shift from traditional farming to the farming of high yielding commercial crops without adequate technical support combined with withdrawal of the state in the area of agricultural extension services in providing counselling on farm technologies, problems faced, immediate remedial steps and lack of timely advice to farmers (ii) decline in public investment in agriculture in the last two decades (iii) low rates of germination of seeds provided by large global firms, spurious seeds and pesticides by private agents (iv) crop failure, pest attack and drought (v) debt at very high interest rate of 36 per cent to 120 per cent from private money lenders (vi) cheap imports leading to decline in pricing and profits (vii) lack of access to water for crops which forced the farmers to borrow money at exorbitant rates of interest to sink borewells that failed.

Sources: *Excerpted from A.K. Mehta and Sourabh Ghosh assited by Ritu Elwadhi, "Globalisation, Loss of Livelihoods and Entry into Poverty," Alternative Economic Survey, India 2004-2005, Alternative Survey Group, Daanish Books, Delhi 2005 and P. Sainath, The swelling 'Register of Deaths', The Hindu, 29 December 2005.*

a rate higher than the price of luxury goods, further intensifies the hardship and deprivation of lower income groups. The unequal distribution of income and assets has also led to the persistence of poverty in India.

All this has created two distinct groups in society: those who posses the means of production and earn good incomes and those who have only their labour to trade for survival. Over the years, the gap between the rich and the poor in India has widened. Poverty is a multi-dimensional challenge for India that needs to be addressed on a war footing.

4.6 Policies and Programmes Towards Poverty Alleviation

The Indian Constitution and five year plans state social justice as the primary objective of the developmental strategies of the government. To quote the First Five Year Plan (1951-56), "the urge to bring economic and social change under present conditions comes from the fact of poverty and inequalities in income, wealth and opportunity". The Second Five Year Plan (1956-61) also pointed out that "the benefits of economic development must accrue more and more to the relatively less privileged classes of society". One can find, in all policy documents, emphasis being laid on poverty alleviation and that various strategies need to be adopted by the government for the same.

The government's approach to poverty reduction was of three dimensions. The first one is growth-oriented approach. It is based on the expectation that the effects of economic growth — rapid increase in gross domestic product and per capita income — would spread to all sections of society and will trickle down to the poor sections also. This was the major focus of planning in the 1950s and early 1960s. It was felt that rapid industrial development and transformation of agriculture through green revolution in select regions would benefit the underdeveloped regions and the more backward sections of the community. You must have read in Chapters 2 and 3 that the overall growth and growth of agriculture and industry have not been impressive. Population growth has resulted in a very low growth in per capita incomes. The gap between poor and rich has actually widened. The Green Revolution exacerbated the disparities regionally and between large and small farmers. There was unwillingness and inability to redistribute land. Economists state that the benefits of economic growth have not trickled down to the poor.

While looking for alternatives to specifically address the poor, policy makers started thinking that incomes and employment for the poor could be raised through the creation of incremental assets and by means of work generation. This could be achieved through specific

Fig. 4.6 *Wage employment under 'food for work' programme*

poverty alleviation programmes. This second approach has been initiated from the Third Five Year Plan (1961-66) and progressively enlarged since then. One of the noted programmes initiated in the 1970s was Food for Work.

The programmes that are being implemented now are based on the perspective of the Tenth Five Year Plan (2002-2007) Expanding self-employment programmes and wage employment programmes are being considered as the major ways of addressing poverty. Examples of self-employment programmes are Rural Employment Generation Programme (REGP), Prime Minister's *Rozgar Yojana* (PMRY) and *Swarna Jayanti Shahari Rozgar Yojana* (SJSRY). The first programme aims at creating self-employment opportunities in rural areas and small towns. The Khadi and Village Industries Commission is implementing it. Under this programme, one can get financial assistance in the form of bank loans to set up small industries. The educated unemployed from low-income families in rural and urban areas can get financial help to set up any kind of enterprise that generates employment under PMRY. SJSRY mainly aims at creating employment oppor-tunities—both self-employment and wage employment—in urban areas.

Earlier, under self-employment programmes, financial assistance was given to families or individuals. Since

the 1990s, this approach has been changed. Now those who wish to benefit from these programmes are encouraged to form self-help groups. Initially they are encouraged to save some money and lend among themselves as small loans. Later, through banks, the government provides partial financial assistance to SHGs which then decide whom the loan is to be given to for self-employment activities. *Swarnajayanti Gram Swarozgar Yojana* (SGSY) is one such programme.

The government has a variety of programmes to generate wage employment for the poor unskilled people living in rural areas. Some of them are National Food for Work Programme (NFWP) and *Sampoorna Grameen Rozgar Yojana* (SGRY). In August 2005, the Parliament has passed a new Act to provide guaranteed wage employment to every household whose adult volunteer is to do unskilled manual work for a minimum of 100 days in a year. This Act is known as National Rural Employment Guarantee Act–2005. Under this Act all those among the poor who are ready to work at the minimum wage can report for work in areas where this programme is implemented.

The third approach to addressing poverty is to provide minimum basic amenities to the people. India was among the pioneers in the world to envisage that through public expenditure on social consumption needs — provision of food grains at subsidised rates, education, health, water supply and sanitation—people's living standard could be improved. Programmes under this approach are expected to supplement the consumption of the poor, create employment opportunities and bring about improvements in health and education. One can trace this approach from the Fifth Five Year Plan, "even with expanded employment opportunities, the poor will not be able to buy for themselves all the essential goods and services. They have to be supplemented up to at least certain minimum standards by social consumption and investment in the form of essential food grains, education, health, nutrition, drinking water, housing, communications and electricity." Three major programmes that aim at improving the food and nutritional status of the poor are Public Distribution System, Integrated Child Development Scheme and Midday Meal Scheme. *Pradhan Mantri Gram Sadak Yojana, Pradhan Mantri Gramodaya Yojana, Valmiki Ambedkar Awas Yojana* are also attempts in the same direction. It may be essential to briefly state that India has achieved satisfactory progress in many aspects.

The government also has a variety of other social security programmes to help a few specific groups. National Social Assistance Programme is one such programme initiated by the central government. Under this programme, elderly people who do not have anyone to take care of them are given pension to sustain themselves. Poor women who are

Work These Out

- Discuss and then develop a list of three employment opportunities that can arise in coastal areas, deserts, hilly tribal areas, tribal areas under : (i) Food for Work Programme and (ii) self-employment.
- Many policy documents, five year plan documents, economic surveys are available in the website of Planning Commission (www.planningcommission.nic.in). Some of them could be available in your school or public library also. In these documents, the initiatives taken by the government and their evaluation are available. Read a few of them and discuss in the classroom.
- In your area or neighbourhood, you will find developmental works such as laying of roads, construction of buildings in government hospitals, government schools etc. Visit such sites and prepare a two-three page report on the nature of work, how many people are getting employed, wages paid to the labourers etc.
- You will also notice some poor women — widows, destitutes, elderly people — receiving social security assistance. Develop profiles of a few such persons. A profile can have their personal information, how they received assistance, the nature of assistance, whether it is sufficient or not and what are the activities they undertake.

destitute and widows are also covered under this scheme.

4.7 Poverty Alleviation Programmes — A Critical Assessment

Efforts at poverty alleviation have borne fruit in that for the first time since independence, the percentage of absolute poor in some states is now well below the national average. Despite a variety of approaches, programmes and schemes to alleviate poverty; hunger, malnourishment, illiteracy and lack of basic amenities continue to be a common feature in many parts of India. Though the policy towards poverty alleviation has evolved in a progressive manner, over the last five and a half decades, it has not undergone any radical transformation. You can find change in nomenclature, integration or mutations of programmes. However, none resulted in any radical change in the ownership of assets, process of production and improvement of basic amenities to the needy. Scholars, while assessing these programmes, state three major areas of concern which prevent their successful implementation. Due to unequal distribution of land and other assets, the benefits from direct poverty alleviation programmes have been appropriated by the non-poor. Compared to the magnitude of poverty, the amount of resources

Box 4.4: Ramdas Korwa's Road to Nowhere

Somehow, Ramdas Korwa of Rachketha village was not overjoyed to learn that he was worth Rs 17.44 lakh to the government. Late in 1993, the authorities decided to lay a three km road leading to Rachketha village in the name of tribal development by allocating Rs 17.44 lakh towards the project.

Tribals constitute a 55 per cent majority in Surguja, one of India's poorest districts. And the Pahadi or Hill Korwas, who have been listed as a primitive tribe by the government, fall in the bottom 5 per cent. Special efforts are underway for their development which often involves large sums of money. Just one centrally funded scheme, the Pahadi Korwa project, is worth Rs 42 crores over a five-year period.

There are around 15,000 Pahadi Korwas, the largest number of these in Surguja. However, for political reasons, the main base of the project is in Raigad district. There was just one small problem about building the Pahadi Korwa Marg in Rachketha—the village is almost completely devoid of Pahadi Korwas. Ramdas's family is the only real exception.

'It doesn't matter if these don't benefit the Pahadi Korwas in the least and are completely useless. Out here, even if you put up a swimming pool and a bungalow, you do it in the name of tribal development,' says an NGO activist. 'Nobody bothered to check whether there were really any Pahadi Korwas living in Rachketha village' and 'there was already a *kutcha* road here,' says Ramavatar Korwa, son of Ramdas. 'They just added *lal mitti* (red earth) to it. Even today, after spending Rs 17.44 lakh, it is not a *pucca* road.'

Ramdas's own demands are touchingly simple. 'All I want is a little water,' he says. 'How can we have agriculture without water?' When repeatedly pressed, he adds: 'Instead of spending Rs 17.44 lakh on that road, if they had spent a few thousand on improving that damaged well on my land, wouldn't that have been better? Some improvement in the land is also necessary, but let them start by giving us a little water.'

Ramdas's problems were ignored. The government's problem was 'fulfilling a target'. 'If the money were simply put into bank fixed deposits, none of these Pahadi Korwa families would ever have to work again. The interest alone would make them very well off by Surguja's standards', says an official mockingly.

Nobody thought of asking Ramdas what he really needed, what his problems were, or involving him in their solution. Instead, in his name, they built a road he does not use, at a cost of Rs17.44 lakh. 'Please do something about my water problem, sir,' says Ramdas Korwa as we set off across the plain, journeying two km to reach his road to nowhere.

Source: *Excerpted from P. Sainath, 1996, Everybody Loves a Good Drought: Stories from India's Poorest Districts, Penguin Books, New Delhi.*

Fig. 4.7 *Scrap collector: mismangament of employment planning forces people to take up very low paying jobs*

allocated for these programmes is not sufficient. Moreover, these programmes depend mainly on government and bank officials for their implementation. Since such officials are ill motivated, inadequately trained, corruption prone and vulnerable to pressure from a variety of local elites, the resources are inefficiently used and wasted. There is also non-participation of local level institutions in programme implementation.

Government policies have also failed to address the vast majority of vulnerable people who are living on or just above the poverty line. It also reveals that high growth alone is not sufficient to reduce poverty. Without the active participation of the poor, successful implementation of any programme is not possible. Poverty can effectively be eradicated only when the poor start contributing to growth by their active involvement in the growth process. This is possible through a process of social mobilisation, encouraging poor people to participate and get them empowered. This will also help create employment opportunities which may lead to increase in levels of income, skill development, health and literacy. Moreover, it is necessary to identify poverty stricken areas and provide infrastructure such as schools, roads, power, telecom, IT services, training institutions etc.

4.8 Conclusion

We have travelled about six decades since independence. The objective of all our policies had been stated as promoting rapid and balanced economic development with equality and social justice. Poverty alleviation has always been accepted as one of India's main challenges by the policy makers, regardless of which government was in power. The absolute number of poor in the country has gone down and some states have less proportion of poor than even the national average. Yet, critics point out that even though vast resources have been allocated and spent, we are still far from reaching the goal.

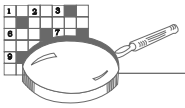
There is improvement in terms of per capita income and average standard of living; some progress towards meeting the basic needs has been made. But when compared to the progress made by many other countries, our performance has not been impressive. Moreover, the fruits of development have not reached all sections of the population. Some sections of people, some sectors of the economy, some regions of the country can compete even with developed countries in terms of social and economic development, yet, there are many others who have not been able to come out of the vicious circle of poverty.

Recap

- Reducing poverty has been one of the major objectives of India's developmental strategies.
- The per capita consumption expenditure level which meets the average per capita daily requirement of 2,400 calories in rural areas and 2,100 calories in urban areas, along with a minimum of non-food expenditure, is called poverty line or absolute poverty.
- When the number of poor and their proportion is compared, we will have an idea of different levels of poverty of people and their distribution between states and over time.
- The number of poor in India and their proportion to total population has declined substantially. For the first time in the 1990s, the absolute number of poor has declined.
- Majority of poor are residing in rural areas and engage themselves in casual and unskilled jobs.
- Income and expenditure oriented approaches do not take into account many other attributes of the poor people.
- Over the years, the government has been following three approaches to reduce poverty in India: growth oriented development, specific poverty alleviation programmes and meeting the minimum needs of the poor.
- Government initiatives are yet to transform the ownership of assets, processes of production and meet the basic amenities of the poor.

EXERCISES

1. Define poverty.
2. What is meant by 'Food for Work' programme?
3. State an example each of self employment in rural and urban areas.
4. How can creation of income earning assets address the problem of poverty?
5. Briefly explain the three dimensional attack on poverty adopted by the government.
6. What programmes has the government adopted to help the elderly people and poor and destitute women?
7. Is there any relationship between unemployment and poverty? Explain.
8. What is the difference between relative and absolute poverty?
9. Suppose you are from a poor family and you wish to get help from the government to set up a petty shop. Under which scheme will you apply for assistance and why?
10. Illustrate the difference between rural and urban poverty. Is it correct to say that poverty has shifted from rural to urban areas? Use the trends in poverty ratio to support your answer.
11. Explain the concept of relative poverty with the help of the population below poverty line in some states of India.
12. Suppose you are a resident of a village, suggest a few measures to tackle the problem of poverty.



SUGGESTED ADDITIONAL ACTIVITIES

1. Collect data from 30 persons of your locality regarding their daily consumption of various commodities. Then rank the persons on the basis of relatively better off and worse, to get the degree of relative poverty.

2. Collect information and fill in the following table with the amount of money spent in terms of rupees by four low income families on various commodities. Analyse the research and find out which family is relatively poor in comparison to the other families. Also find out who are absolutely poor if the poverty line is fixed at an expenditure of Rs 500 per month per person.

Commodities	*Family A*	*Family B*	*Family C*	*Family D*
Wheat/Rice				
Vegetable Oil				
Sugar				
Electricity/ Lighting				
Ghee				
Clothes				
House Rent				

2. The following table shows the average monthly expenditure per person on items of consumption in India and Delhi slums in terms of percentage. 'Rice and wheat' in rural areas at 25 per cent means that for every 100 rupees spent, Rs 25 goes towards the purchase of rice and wheat alone. Read the table further and answer the questions that follow.

Items	*Rural*	*Urban*	*Delhi Slums*
Rice and wheat	25.0	35.9	28.7
Pulses and their products	5.7	6.1	9.9
Milk and milk products	17.4	14.1	10.3
Vegetables and fruits	15.1	12.7	19.6
Meat, fish and eggs	6.3	5.3	13.1
Sugar	3.3	3.8	4.0
Salt and spices	10.8	10.8	8.1
Other food items	16.5	11.3	6.4
Total: All food	**100**	**100**	**100**
Expenditure on food items as a % of all items	62.9	72.2	72.8

- Compare the percentage of expenditure on food items among different groups and their priorities.
- Do you think households in slums are depending more on cereals and pulses?
- On which item do people living in different areas spend the least? Compare them.
- Do you think that slum dwellers have given more emphasis to meat, fish and eggs?

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5

Human Capital Formation in India

After studying this chapter, the learners will

- understand the concepts of Human Resources, Human Capital Formation and Human Development
- have understood the links between investment in human capital, economic growth and human development
- have understood the need for government spending on education and health
- have learnt about the state of India's educational attainment.

> ***"... the wisdom of expending public and private funds on education is not to be measured by its direct fruits alone. It will be profitable as a mere investment, to give the masses of people much greater opportunities than they can generally avail themselves of. For by this means many, who would have died unknown, are enabled to get the start needed for bringing out their latent abilities".***
>
> ***Alfred Marshall***

5.1 Introduction

Think of one factor that has made a great difference in the evolution of mankind. Perhaps it is man's capacity to store and transmit knowledge which he has been doing through conversation, through songs and through elaborate lectures. But man soon found out that we need a good deal of training and skill to do things efficiently. We know that the labour skill of an educated person is more than that of an uneducated person and hence the former is able to generate more income than the latter and his contribution to economic growth is, consequently, more.

Education is sought not only as it confers higher earning capacity on people but also for its other highly valued benefits: it gives one a better social standing and pride; it enables one to make better choices in life; it provides knowledge to understand the changes taking place in society; it also stimulates innovations. Moreover, the availability of educated labour force facilitates adaptation of new

Fig. 5.1 *Adequate education and training to farmers can raise productivity in farms*

technologies. Economists have stressed the need for expanding educational opportunities in a nation as it accelerates the development process.

5.2 What is Human Capital?

Just as a country can turn physical resources like land into physical capital like factories, similarly, it can also turn human resources like students into human capital like engineers and doctors. Societies need sufficient human capital in the first place—in the form of competent people who have themselves been educated and trained as professors and other professionals. In other words, we need good human capital to produce other human capital (say, doctors, engineers...). This means that we need investment in human capital to produce more human capital out of human resources.

Let us understand a little more of what human capital means by posing the following questions :

(i) What are the sources of human capital?
(ii) Is there any relation between human capital and economic growth of a country?
(iii) Is the formation of human capital linked to man's all-round development or, as it is now called, human development?
(iv) What role can the government play in human capital formation in India?

5.3 Sources of Human Capital

Investment in education is considered as one of the main sources of human capital. There are several other sources as well. Investments in health, on- the-job training, migration and information are the other sources of human capital formation.

Why do your parents spend money on education? Spending on education by individuals is similar to spending on capital goods by companies with the objective of increasing future profits over a period of time. Likewise, individuals invest in education with the objective of increasing their future income.

Work This Out

➤ Take three families from different strata (i) very poor (ii) middle class and (iii) affluent. Study the expenditure pattern of the families on education of male and female children.

Like education, health is also considered as an important input for the development of a nation as much as it is important for the development of an individual.

Who can work better—a sick person or a person with sound health? A sick labourer without access to medical facilities is compelled to abstain from work and there is loss of productivity. Hence, expenditure on health is an important source of human capital formation.

Preventive medicine (vaccination), **curative medicine** (medical intervention during illness), **social medicine** (spread of health literacy) and provision of clean drinking water and good sanitation are the various forms of health expenditures. Health expenditure directly increases the supply of healthy labour force and is, thus, a source of human capital formation.

Firms spend on giving **on-the-job-training** to their workers. This may take different forms: one, the workers may be trained in the firm itself under the supervision of a skilled worker; two, the workers may be sent for off-campus training. In both these cases firms incur some expenses. Firms will, thus, insist that the workers should work for a specific period of time, after their on-the-job training, during which it can recover the benefits of the enhanced productivity owing to the training. Expenditure regarding on-the-job training is a source of human capital formation as the return of such expenditure in the form of enhanced labour productivity is more than the cost of it.

People **migrate** in search of jobs that fetch them higher salaries than what they may get in their native

places. Unemployment is the reason for the rural-urban migration in India. Technically qualified persons, like engineers and doctors, migrate to other countries because of higher salaries that they may get in such countries. Migration in both these cases involves cost of transport, higher cost of living in the migrated places and psychic costs of living in a strange socio-cultural setup. The enhanced earnings in the new place outweigh the costs of migration; hence, expenditure on migration is also a source of human capital formation.

People spend to acquire **information** relating to the labour market and other markets like education and health. For example, people want to know the level of salaries associated with various types of jobs, whether the educational institutions provide the right type of employable skills and at what cost. This information is necessary to make decisions regarding investments in human capital as well as for efficient utilisation of the acquired human capital stock. Expenditure incurred for acquiring information relating to the labour market and other markets is also a source of human capital formation.

Box 5.1: Physical and Human Capital

Both the forms of capital formation are outcomes of conscious investment decisions. Decision regarding investment in physical capital is taken on the basis of one's knowledge in this regard. The entrepreneur possesses knowledge to calculate the expected rates of return to a range of investments and then rationally decides which one of the investments should be made. The ownership of physical capital is the outcome of the conscious decision of the owner — the physical capital formation is mainly an economic and technical process. A substantial part of the human capital formation takes place in one's life when she/he is unable to decide whether it would maximise her/his earnings. Children are given different types of school education and health care facilities by their parents and the society. The peers, educators and society influence the decisions regarding human capital investments even at the tertiary level, that is, at the college level. Moreover, the human capital formation at this stage is dependent upon the already formed human capital at the school level. Human capital formation is partly a social process and partly a conscious decision of the possessor of the human capital.

You know that the owner of a physical capital, says a bus, need not be present in the place where it is used; whereas, a bus-driver, who possesses the knowledge and ability to drive the bus, should be present when the bus is used for transportation of men and materials. Physical capital is tangible and can be easily sold in the market like any other commodity. Human capital is intangible; it is endogenously built in the body and mind of its owner. Human capital is not sold in the market; only the services of human capital are sold and hence the necessity of the owner of the human capital to be present in the place of production. The physical capital is separable from its owner, whereas, human capital is inseparable from its owner.

The two forms of capital differ in terms of mobility across space. Physical capital is completely mobile between countries except for some artificial trade restrictions. Human capital is not perfectly mobile between countries as movement is restricted by nationality and culture. Therefore, physical capital formation can be built even through imports, whereas human capital formation is to be done through conscious policy formulations in consonance with the nature of the society and economy and expenditure by the state and the individuals.

Both forms of capital depreciate with time but the nature of depreciation differs between the two. Continuous use of machine leads to depreciation and change of technology makes a machine obsolete. In the case of human capital, depreciation takes place with ageing but can be reduced, to a large extent, through continuous investment in education, health, etc. This investment also facilitates the human capital to cope with change in technology which is not the case with physical capital.

Nature of benefits flowing from human capital are different from that of physical capital. Human capital benefits not only the owner but also the society in general. This is called external benefit. An educated person can effectively take part in a democratic process and contribute to the socio-economic progress of a nation. A healthy person, by maintaining personal hygiene and sanitation, stops the spread of contagious diseases and epidemics. Human capital creates both private and social benefits, whereas physical capital creates only private benefit. That is, benefits from a capital good flow to those who pay the price for the product and services produced by it.

The concept of physical capital is the base for conceptualising human capital. There are some similarities between the two forms of capital; there are some striking dissimilarities as well. See Box 5.1.

Human Capital and Economic Growth: Who contributes more to national income — a worker in a factory or a software professional? We know that the labour skill of an educated person is more than that of an uneducated person and that the former generates more income than the latter. Economic growth means the increase in real national income of a country; naturally, the contribution of the educated person to economic growth is more than that of an illiterate person. If a healthy person could provide uninterrupted labour supply for a longer period of time, then health is also an important factor for economic growth. Thus, both education and health, along with many other factors like on-the-job training, job market information and migration, increase an

Work These Out

➤ 'An educated person contributes more to the income stream'. Find out the monthly salary earned by

— a mason
— watchman in your apartment/school
— maid servant/*dhobi*
— teacher/clerk in an office
— professor
— doctor/engineer/an executive

Fig. 5.2 *Creating human capital: a school being run in make shift premises in a village*

individual's income generating capacity.

This enhanced productivity of human beings or human capital contributes substantially not only towards increasing labour productivity but also stimulates innovations and creates ability to absorb new technologies. Education provides knowledge to understand changes in society and scientific advancements, thus, facilitate inventions and innovations. Similarly, the availability of educated labour force facilitates adaptation to new technologies.

Empirical evidence to prove that increase in human capital causes economic growth is rather nebulous. This may be because of measurement problems. For example, education measured in terms of years of schooling, teacher-pupil ratio and enrolment rates may not reflect the quality of education; health services measured in monetary terms, life expectancy and mortality rates may not reflect the true health status of the people in a country. Using the indicators mentioned above, an analysis of improvement in education and health sectors and growth in real per capita income in both developing and developed countries shows that there is convergence in the measures of human capital but no sign of convergence of per capita real income. In other words, the human capital growth in developing countries has been faster but the growth of per capita real income has not been that fast. There are reasons to believe that the

Fig. 5.3 *Scientific and technical manpower: a rich ingredient of human capital*

causality between human capital and economic growth flows in either directions. That is, higher income causes building of high level of human capital and vice versa, that is, high level of human capital causes growth of income.

India recognised the importance of human capital in economic growth long ago. The Seventh Five Year Plan says, "Human resources development (read human capital) has necessarily to be assigned a key role in any development strategy, particularly in a country with a large population. Trained and educated on sound lines, a large population can itself become an asset in accelerating economic growth and in ensuring social change in desired directions."

It is difficult to establish a relation of cause and effect from the growth of human capital (education and health) to economic growth but we can see in

TABLE 5.1

Select Indicators of Development in Education and Health Sectors

Particulars		*1951*	*1981*	*1991*	*2001*
Real Per Capita Income (in Rs)		3,687	5,353	7,321	10,306
Crude Death Rate (Per 1,000 Population)		25.1	12.5	9.8	8.1
Infant Mortality Rate		146	110	80	63
Life Expectancy at Birth (in Years)	Male	37.2	54.1	59.7	63.9
	Female	36.2	54.7	60.9	66.9
Literacy Rate (%)		16.67	43.57	52.21	65.20

Table 5.1 that these sectors have grown simultaneously. Growth in each sector probably has reinforced the growth of every other sector.

Two independent reports on the Indian economy, in recent times, have identified that India would grow faster due to its strength in human capital formation. Deutsche Bank, a German bank, in its report on 'Global Growth Centres' (published on 1.7.05) identified that India will emerge as one among four major growth centres in the world by the year 2020. It further states, "Our empirical investigation supports the view that human capital is the most important factor of production in today's economies. Increases in human capital are crucial to achieving increases in GDP." With reference to India it states, "Between 2005 and 2020 we expect a 40 per cent rise in the average years of education in India, to just above 7 years..."

Fig. 5.4 *Job on hand: transforming India into a knowledge economy*

World Bank, in its recent report, 'India and the Knowledge Economy —Leveraging Strengths and Opportunities', states that India should make a transition to the knowledge economy and if it uses its knowledge as much as Ireland does (it is judged that Ireland uses its knowledge economy very effectively), then the per capita income of India will increase from a little over US $1000 in

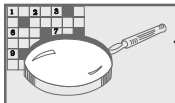
Box 5.2: India as a Knowledge Economy

The Indian software industry has been showing an impressive record over the past decade. Entrepreneurs, bureaucrats and politicians are now advancing views about how India can transform itself into a knowledge-based economy by using information technology (IT). There have been some instances of villagers using e-mail which are cited as examples of such transformation. Likewise, e-governance is being projected as the way of the future. The value of IT depends greatly on the existing level of economic development. IT can make existing assets and processes more effective and efficient but, first of all, a basic infrastructure needs to be developed.

2002 to US $ 3000 in 2020. It further states that the Indian economy has all the key ingredients for making this transition, such as, a critical mass of skilled workers, a well-functioning democracy and a diversified science and technology infrastructure. Thus the two reports point out the fact that further human capital formation in India will move its economy to a higher growth trajectory.

5.4 Human Capital and Human Development

The two terms sound similar but there is a clear distinction between them. Human capital considers education and health as a means to increase labour productivity. Human development is based on the idea that education and health are integral to human well-being because only when people have the ability to read and write and the ability to lead a long and healthy life, they will be able to make other choices which they value. Human capital treats human beings as a means to an end; the end being the increase in productivity. In this view, any investment in education and health is unproductive if it does not enhance output of goods and services. In the human development perspective, human beings are ends in themselves. Human welfare should be increased through investments in education and health even if such investments do not result in higher labour productivity. Therefore, basic education and basic health are important in themselves, irrespective of their contribution to labour productivity. In such a view,



Work This Out

- If a construction worker, maid-servant, *dhobi* or a peon in school has absented herself/himself for long due to ill health, find out how it has affected her/his

  (i) job security

  (ii) wage/salary

What could be the possible reasons?

every individual has a right to get basic education and basic health care, that is, every individual has a right to be literate and lead a healthy life.

5.5 Human Capital Formation in India: Great Prospects

In this section we are going to analyse human capital formation in India. We have already learnt that human capital formation is the outcome of investments in education, health, on-the-job training, migration and information: of these education and health are very important sources of human capital formation. We know that ours is a federal country with a union government, state governments and local governments (Municipal Corporations, Municipalities and Village Panchayats). The Constitution of India mentions the functions to be carried out by each level of government. Accordingly, expenditures on both education and health are to be carried out simultaneously by all the three tiers of the government. Analysis of health sector is taken up in the Chapter on infrastructure; hence, we will analyse only the education sector here.

Do you know who takes care of education and health in India? Before we take up the analysis of the education sector in India, we will look into the need for government intervention in education and health sectors. We do understand that education and health care services create both private and social benefits and this is the reason for the existence of both private and public institutions in the education and health service markets. Expenditures on education and health make substantial long-term impact and they cannot be easily reversed; hence, government intervention is essential. For instance, once a child is admitted to a school or health care centre where the required services are not provided, before the decision is taken to shift the child to another institution, substantial amount of damage would have been done. Moreover, individual consumers of these services do not have complete information about the quality of services and their costs. In this situation, the providers of education and health services acquire monopoly power and are involved in exploitation. The role of government in this situation is to ensure that the private providers of these services adhere to the standards stipulated by the government and charge the correct price.

In India, the ministries of education at the union and state level, departments of education and various organisations like National Council of Educational Research and Training (NCERT), University Grants Commission (UGC) and All India Council of Technical Education (AICTE) regulate the education sector. Similarly, the ministries of health at the union and state level, departments of health and various organisations like Indian Council for Medical Research (ICMR) regulate the health sector.

In a developing country like ours, with a large section of the population living below the poverty line, many of

us cannot afford to access basic education and health care facilities. Moreover, a substantial section of our people cannot afford to reach super specialty health care and higher education. Furthermore, when basic education and health care is considered as a right of the citizens, then it is essential that the government should provide education and health services free of cost for the deserving citizens and those from the socially oppressed classes. Both, the union and state governments, have been stepping up expenditures in the education sector over the years in order to fulfil the objective of attaining cent per cent literacy and considerably increase the average educational attainment of Indians.

Work This Out

- Identify the objectives and functions of NCERT, UGC, AICTE and ICMR.

5.6 Education Sector in India

Growth in Government Expenditure on Education: Do you know how much the government spends on education? This expenditure by the government is expressed in two ways (i) as a percentage of 'total government expenditure' (ii) as a percentage of Gross Domestic Product (GDP).

The percentage of 'education expenditure of total government expenditure' indicates the importance of education in the scheme of things before the government. The percentage of 'education expenditure of GDP' expresses how much of our income is being committed to the development of education in the country. During 1952-2002, education expenditure as percentage of total government expenditure increased from 7.92 to 13.17 and as percentage of GDP increased from 0.64 to 4.02. Throughout this period the increase in education expenditure has not been uniform and there has been irregular rise and fall. To this if we include the private expenditure incurred by individuals and by philanthropic institutions, the total education expenditure should be much higher.

Elementary education takes a major share of total education expenditure and the share of the higher/tertiary education (institutions of higher learning like colleges, polytechnics and universities) is the least. Though, on an average, the government spends less on tertiary education, 'expenditure per student' in tertiary education is higher than that of elementary. This does not mean that financial resources should be transferred from tertiary education to elementary education. As we expand school education, we need more teachers who are trained in the higher educational institutions; therefore, expenditure on all levels of education should be increased.

The per capita education expenditure differs considerably across states from as high as Rs 3,440 in Lakshadweep

Fig. 5.5 *Investment in educational infrastructure is inevitable*

to as low as Rs 386 in Bihar. This leads to differences in educational opportunities and attainments across states.

One can understand the inadequacy of the expenditure on education if we compare it with the desired level of education expenditure as recommended by the various commissions. More than 40 years ago, the Education Commission (1964–66) had recommended that at least 6 per cent of GDP be spent on education so as to make a noticeable rate of growth in educational achievements.

In December 2002, the Government of India, through the 86th Amendment of the Constitution of India, made free and compulsory education a fundamental right of all children in the age group of 6-14 years. The Tapas Majumdar Committee, appointed by the Government of India in 1998, estimated an expenditure of around Rs 1.37 lakh crore over 10 years (1998-99 to 2006-07) to bring all Indian children in the age group of 6-14 years under the purview of school education. Compared to this desired level of education expenditure of around 6 per cent of GDP, the current level of a little over 4 per cent has been quite inadequate. In principle, a goal of 6 per cent needs to be reached—this has been accepted as a must for the coming years.

In the Union Budget 2000-05, the Government of India levied a 2 per cent 'education cess' on all union taxes. The government estimated to get a revenue of Rs 4,000-5,000 crore and the entire

Work These Out

- Prepare case studies of dropouts at different levels of schooling, say
  - (i) Primary dropouts
  - (ii) Class VIII dropouts
  - (iii) Class X dropouts

  Find out the causes and discuss in the class.
- 'School dropouts are giving way to child labour'. Discuss how this is a loss to human capital.

TABLE 5.2

Educational Attainment in India

Sl.No.	*Particulars*	*1990*	*2000*
1.	Adult Literacy Rate (per cent of people aged 15+)		
	1.1 Male	61.9	68.4
	1.2 Female	37.9	45.4
2.	Primary completion rate (per cent of relevant age group)		
	2.1 Male	78	85
	2.2 Female	61	69
3.	Youth literacy rate (per cent of people aged 15+ to 24)		
	3.1 Male	76.6	79.7
	3.2 Female	54.2	64.8

amount was earmarked for spending on elementary education. In addition to this, the government sanctioned a large outlay for the promotion of higher education and new loan schemes for students to pursue higher education.

Educational Achievements in India: Generally, educational achievements in a country are indicated in terms of adult literacy level, primary education completion rate and youth literacy rate. These statistics for the years 1990 and 2000 are given above in Table 5.2.

5.7 Future Prospects

Education for All — Still a Distant Dream: Though literacy rates for both — adults as well as youth — have increased, still the absolute number of illiterates in India is as much as India's

Fig. 5.6 *School dropouts give way to child labour: a loss to human capital*

population was at the time of independence. In 1950, when the Constitution of India was passed by the Constituent Assembly, it was noted in the Directives of the Constitution that the government should provide free and compulsory education for all children up to the age of 14 years within 10 years from the commencement of the Constitution. Had we achieved this, we would have cent per cent literacy by now.

Gender Equity — Better than Before: The differences in literacy rates between males and females are narrowing signifying a positive development in gender equity; still the need to promote education for women in India is imminent for various reasons such as improving economic independence and social status of women and also because women education makes a favourable impact on fertility rate and health care of women and children. Therefore, we cannot be complacent about the upward movement in the literacy rates and we have miles to go in achieving cent per cent adult literacy.

Fig. 5.7 *Higher Education: few takers*

Higher Education — a Few Takers: The Indian education pyramid is steep indicating lesser and lesser number of people reaching the higher education level. Moreover, the level of unemployment among educated youth is the highest. As per NSSO data, in 2000, the unemployment rate of educated youth (Secondary Education and above) was 7.1 per cent and unemployment of people with up to primary education was only 1.2 per cent. Therefore, the government should increase allocation for higher education and also improve the standard of higher education institutions, so that students are imparted employable skills in such institutions.

5.8 Conclusion

The economic and social benefits of human capital formation and human development are well known. The union and state governments in India have been earmarking substantial financial outlays for development of education and health sectors. The spread of education and health services across different sectors of society should be ensured so as to simultaneously attain economic growth and equity. India has a rich stock of scientific and technical manpower in the world. The need of the hour is to better it qualitatively and provide such conditions so that they are utilised in our own country.

Recap

- Investments in education convert human beings into human capital; human capital represents enhanced labour productivity, which is an acquired ability and an outcome of deliberate investment decisions with an expectation that it will increase future income sources.
- Investments in education, on-the-job training, health, migration and information are the sources of human capital formation.
- The concept of physical capital is the base for conceptualising human capital. There are some similarities as well as dissimilarities between the two forms of capital formation.
- Investment in human capital formation is considered as efficient and growth enhancing.
- Human development is based on the idea that education and health are integral to human well-being because only when people have the ability to read and write and the ability to lead a long and healthy life, will they be able to make other choices which they value.
- The percentage of 'education expenditure of total government expenditure' indicates the importance of education in the scheme of things before the government.

EXERCISES

1. What are the two major sources of human capital in a country?
2. What are the indicators of educational achievement in a country?
3. Why do we observe regional differences in educational attainment in India?
4. Bring out the differences between human capital and human development.
5. How is human development a broader term as compared to human capital?
6. What factors contribute to human capital formation?

7. Mention two government organisations each that regulate the health and education sectors.

8. Education is considered an important input for the development of a nation. How?

9. Discuss the following as a sources of human capital formation

   (i) Health infrastructure

   (ii) Expenditure on migration.

10. Establish the need for acquiring information relating to health and education expenditure for the effective utilisation of human resources.

11. How does investment in human capital contribute to growth?

12. 'There is a downward trend in inequality world-wide with a rise in the average education levels'. Comment.

13. Examine the role of education in the economic development of a nation.

14. Explain how investment in education stimulates economic growth.

15. Bring out the need for on-the-job-training for a person.

16. Trace the relationship between human capital and economic growth.

17. Discuss the need for promoting women's education in India.

18. Argue in favour of the need for different forms of government intervention in education and health sectors.

19. What are the main problems of human capital formation in India?

20. In your view, is it essential for the government to regulate the fee structure in education and health care institutions? If so, why?

SUGGESTED ADDITIONAL ACTIVITIES

1. Identify how Human Development Index is calculated. What is the position of India in the World Human Development Index?

2. Is India going to be a knowledge based economy in the near future? Discuss in the classroom.

3. Interpret the data given in Table 5.2.

4. As an educated person, what will be your contribution to the cause of education? (Example 'Each one—teach one').

5. Enlist the various sources that provide information regarding education, health and labour.

6. Read the annual reports of Union Ministries of Human Resource Development and Health and make summaries. Read the chapter on social sector in the *Economic Survey* .

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6

RURAL DEVELOPMENT

After studying this chapter, the learners will

- understand rural development and the major issues associated with it
- appreciate how crucial the development of rural areas is for India's overall development
- understand the critical role of credit and marketing systems in rural development
- learn about the importance of diversification of productive activities to sustain livelihoods
- understand the significance of organic farming in sustainable development.

> ***"Only the tillers of the soil live by the right. The rest form their train and eat only the bread of dependence".***
>
> ***Thiruvalluvar***

6.1 Introduction

In Chapter 4, we studied how poverty was a major challenge facing India. We also came to know that the majority of the poor live in rural areas where they do not have access to the basic necessities of life.

Agriculture is the major source of livelihood in the rural sector. Mahatma Gandhi once said that the real progress of India did not mean simply the growth and expansion of industrial urban centres but mainly the development of the villages. This idea of village development being at the centre of the overall development of the nation is relevant even today. Why is this so? Why should we attach such significance to rural development when we see around us fast growing cities with large industries and modern information technology hubs? It is because more than two-third of India's population depends on agriculture that is not productive enough to provide for them; one-third of rural India still lives in abject poverty. That is the reason why we have to see a developed rural India if our nation has to realise real progress. What, then, does rural development imply?

6.2 What is Rural Development?

Rural development is a comprehensive term. It essentially focuses on action for the development of areas that are lagging behind in the overall development of the village economy. Some of the areas which are challenging and need fresh initiatives for development in India include

- Development of human resources including
  - literacy, more specifically, female literacy, education and skill development
  - health, addressing both sanitation and public health
- Land reforms
- Development of the productive resources of each locality
- Infrastructure development like electricity, irrigation, credit, marketing, transport facilities including construction of village roads and feeder roads to nearby highways, facilities for agriculture research and extension, and information dissemination
- Special measures for alleviation of poverty and bringing about significant improvement in the living conditions of the weaker sections of the population emphasising access to productive employment opportunities.

All this means that farming communities have to be provided with various means that help them increase the productivity of grains, cereals, vegetables and fruits. They also need to be given opportunities to diversify into various non-farm productive activities such as food processing.

Giving them better and more affordable access to healthcare, sanitation facilities at workplaces and homes and education for all would also need to be given top priority for rapid rural development.

It was observed in an earlier chapter that although the share of agriculture sector's contribution to GDP was on a decline, the population dependent on this sector did not show any significant change. Further, after the initiation of reforms, the growth rate of agriculture sector decelerated to 2.3 per cent per annum during the 1990s, which was lower than the earlier years. Scholars identify decline in public investment since 1991 as the major reason for this. They also argue that inadequate infrastructure, lack of alternate employment opportunities in the industry or service sector, increasing casualisation of employment etc. further impede rural development. The impact of this phenomenon can be seen from the growing distress witnessed among farmers across different parts of India. Against this background, we will critically look at some of the crucial aspects of rural India like credit and marketing systems, agricultural diversification and the role of organic farming in promoting sustainable development.

Work These Out

- On a monthly basis, go through the newspapers of your region and identify the problems raised by them in relation to rural areas and the solutions offered. You could also visit a nearby village and identify the problems faced by people there.
- Prepare a list of recent schemes and their objectives from the government website http://www.rural.nic.in

6.3 Credit and Marketing in Rural Areas

Credit: Growth of rural economy depends primarily on infusion of capital, from time to time, to realise higher productivity in agriculture and non-agriculture sectors. As the time gestation between crop sowing and realisation of income after production is quite long, farmers borrow from various sources to meet their initial investment on seeds, fertilisers, implements and other family expenses of marriage, death, religious ceremonies etc.

At the time of independence, moneylenders and traders exploited small and marginal farmers and landless labourers by lending to them on high interest rates and by manipulating the accounts to keep them in a debt-trap. A major change occurred after 1969 when India adopted social banking and multi-agency approach to adequately meet the needs of rural credit. Later, the National Bank for Agriculture and Rural Development (NBARD) was set up in 1982 as an apex body to coordinate the activities of all institutions involved in the rural financing system. The Green

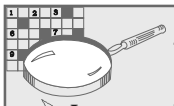
Box 6.1: The Poor Women's Bank

'Kudumbashree' is a women-oriented community-based poverty reduction programme being implemented in Kerala. In 1995, a thrift and credit society was started as a small savings bank for poor women with the objective to encourage savings. The thrift and credit society mobilised Rs 1 crore as thrift savings. These societies have been acclaimed as the largest informal banks in Asia in terms of participation and savings mobilised.

Source: *www. kudumbashree.com. Visit this website and explore various other initiatives undertaken by this organisation. Can you identify some factors which contributed to their successes?*

Revolution was a harbinger of major changes in the credit system as it led to the diversification of the portfolio of rural credit towards production- oriented lending.

The institutional structure of rural banking today consists of a set of multi-agency institutions, namely, commercial banks, regional rural banks (RRBs), cooperatives and land development banks. The major aim of designing this multi-agency system is to dispense adequate credit at cheaper rates. Recently, Self-Help Groups (henceforth SHGs) have emerged to fill the gap in the formal credit system because the formal credit delivery mechanism has not only proven inadequate but has also not been fully integrated into the overall rural social and community development. Since some kind of collateral is required, vast proportion of poor rural households were automatically out of the credit network. The SHGs promote thrift in small proportions by a minimum contribution from each member. From the pooled money, credit is given to the needy members to be repayable in small instalments at reasonable interest rates. By March end 2003, more than seven lakh SHGs had reportedly been credit linked. Such credit provisions are generally referred to as **micro-credit programmes**. SHGs have helped in the



Work These Out

- In your locality/neighbourhood, you might notice self-help groups providing credit. Attend few meetings of such self-help groups. Write a report on the profile of a self-help group. The profile may include — when it was started, the number of members, amount of savings and type of credit they provide and how borrowers use the loan.
- You might also find that those who take a loan for starting self-employment activities use it for other purposes. Interact with few such borrowers and explore the possibilities of encouraging them to start self-employment activities.

empowerment of women but the borrowings are mainly confined to consumption purposes and negligible proportion is borrowed for agricultural purposes.

Rural Banking — a Critical Appraisal: Rapid expansion of the banking system had a positive effect on rural farm and non-farm output, income and employment, especially after the green revolution — it helped farmers to avail services and credit facilities and a variety of loans for meeting their prodution needs. Famines became events of the past; we have now achieved food security which is reflected in the abundant buffer stocks of grains. However, all is not well with our banking system. This is largely because of the chronic underperformance of formal credit institutions and high incidence of overdue instalments by the farmers.

With the possible exception of the commercial banks, other formal institutions have failed to develop a culture of deposit mobilisation — lending to worthwhile borrowers and effective loan recovery. Agriculture loan default rates have been chronically high and many studies reveal that about 50 per cent of the defaulters were categorised as 'wilful defaulters' which is a threat to the smooth functioning of the banking system and needs to be controlled.

Thus, the expansion and promotion of the rural banking sector has taken a backseat after reforms. To improve the situation, banks need to change their approach from just being lenders to building up relationship banking with the borrowers. Inculcating the habit of thrift and efficient utilisation of financial resources needs to be enhanced among the farmers too.

Work These Out

- In the last few years, you might have taken note — in your neighbourhood if you are living in rural areas or read in the newspapers or seen on TV — of farmers commiting suicides. Many such farmers had borrowed money for farming and other purposes. It was found that when they were unable to pay back due to crop failure, insufficient income and employment opportunities, they took such steps. Collect information relating to such cases and discuss in the classroom.
- Visit banks that cater to rural areas. They may be primary agricultural cooperative banks, land development banks, regional rural banks or district cooperative banks. Collect details such as how many rural households borrowed from them, amount generally borrowed, kinds of collateral used, interest rates and dues.
- If farmers who borrowed from cooperative banks could not pay back due to crop failure and other reasons, their loans should be waived otherwise they may take drastic decisions like committing suicides. Do you agree?

6.4 Agricultural Market System

Have you ever asked yourself how food grains, vegetables and fruits that we consume daily come from different parts of the country? The mechanism through which these goods reach different places depends on the market channels. Agricultural marketing is a process that involves the assembling, storage, processing, transportation, packaging, grading and distribution of different agricultural commodities across the country.

Prior to independence, farmers, while selling their produce to traders, suffered from faulty weighing and manipulation of accounts. Farmers who did not have the required information on prices prevailing in markets were often forced to sell at low prices. They also did not have proper storage facilities to keep back their produce for selling later at a better price. Do you know that even today, more than 10 per cent of goods produced in farms are wasted due to lack of storage? Therefore, state intervention became necessary to regulate the activities of the private traders.

Let us discuss four such measures that were initiated to improve the marketing aspect. The first step was regulation of markets to create orderly and transparent marketing conditions. By and large, this policy benefited farmers as well as consumers. However, there is still a need to develop about 27,000 rural periodic markets as regulated market places to realise the full potential of rural markets. Second component is provision of physical infrastructure facilities like roads, railways, warehouses, godowns, cold storages and processing units. The current infrastructure facilities are quite inadequate to meet the growing demand and need to be improved. Cooperative marketing, in realising fair prices for farmers' products, is the third aspect of government initiative. The success of milk cooperatives in transforming the

Fig. 6.1 *Regulated market yards benefit farmers as well as consumers*

Work These Out

- Visit a nearby vegetable and fruit market. Observe and identify different characteristics of the market. Identify the place of origin of at least ten different fruits and vegetables and distance travelled to reach the market. Further, look at the modes of transport and its implication on prices.
- Most small towns have regulated market yards. Farmers can go to these markets and sell their produce. They can also store their goods in the yard. Visit one regulated market yard; collect the details of its functioning, kind of goods coming to the yard and how prices are fixed.

social and economic landscape of Gujarat and some other parts of the country is testimony to the role of cooperatives. However cooperatives have received a setback during the recent past due to inadequate coverage of farmer members, lack of appropriate link between marketing and processing cooperatives and inefficient financial management. The fourth element is the policy instruments like (i) assurance of minimum support prices (MSP) for 24 agricultural products (ii) maintenance of buffer stocks of wheat and rice by Food Corporation of India and (iii) distribution of food grains and sugar through PDS. These instruments are aimed at protecting the income of the farmers and providing foodgrains at a subsidised rate to the poor. However, despite government intervention, private trade (by moneylenders, rural political elites, big merchants and rich farmers) predominates agricultural markets. The quantity of agricultural products, handled by the government agencies and consumer cooperatives, constitutes only 10 per cent while the rest is handled by the private sector.

Agricultural marketing has come a long way with the intervention of the government in various forms. The rapid commercialisation of agriculture in the era of globalisation offers tremendous opportunities for value addition of agro-based products through processing and this needs to be encouraged apart from awareness and training of the farmers to improve their marketing ability.

Emerging Alternate Marketing Channels: It has been realised that if farmers directly sell their produce to consumers, it increases their share in the price paid by the consumers. Some examples of these channels are *Apni Mandi* (Punjab, Haryana, Rajasthan); *Hadaspar Mandi* (Pune); *Rythu Bazars* (vegetable and fruit market in Andhra Pradesh) and *Uzhavar Sandies* (farmers markets in Tamil Nadu). Further, several national and multinational fast food chains are increasingly entering into contracts/alliances with farmers to encourage them to cultivate farm products (vegetables, fruits, etc.) of the desired quality by providing them with

not only seeds and other inputs but also assured procurement of the produce at pre-decided prices. Such arrangements will help in reducing the price risks of farmers and would also expand the markets for farm products.

Work This Out

- Visit one such alternative marketing system which farmers in your locality, or in the neighbourhood rural areas, use. How are they different from regulated market yards? Should they be encouraged and supported by the government? Why and how? Discuss.

6.5 Diversification into Productive Activities

Diversification includes two aspects: one relates to diversification of crop production and the other relates to a shift of workforce from agriculture to other allied activities (livestock, poultry, fisheries etc.) and non-agriculture sector. The need for diversification arises from the fact that there is greater risk in depending exclusively on farming for livelihood. Diversification towards new areas is necessary not only to reduce the risk from agriculture sector but also to provide productive sustainable livelihood options to rural people. Much of the agricultural employment activities are concentrated in the Kharif season. But during the Rabi season, in areas where there are inadequate irrigation facilities, it becomes difficult to find gainful employment. Therefore expansion into other sectors is essential to provide supplementary gainful employment and in realising higher levels of income for rural people to overcome poverty and other tribulations. Here the focus will be only on allied activities, non-farm employment and other emerging alternatives of livelihood, though there are many other options available for providing sustainable livelihoods in rural areas.

As agriculture is already overcrowded, a major proportion of the increasing labour force needs to find alternate employment opportunities in other non-farm sectors. Non-farm economy has several segments in it; some possess dynamic linkages that permit healthy growth while others are

Fig. 6.2 *Jaggery making is an allied activity of the farming sector*

Box 6.2: Tamil Nadu Women in Agriculture (TANWA)

Tamil Nadu Women in Agriculture (TANWA) is a project initiated in Tamil Nadu to train women in latest agricultural techniques. It induces women to actively participate in raising agricultural productivity and family income. At a Farm Women's Group in Thiruchirapalli, run by Anthoniammal, trained women are successfully making and selling vermicompost and earning money from this venture. Many other Farm Women's Groups are creating savings in their group by functioning like mini banks through a micro-credit system. With the accumulated savings, they promote small-scale household activities like mushroom cultivation, soap manufacture, doll making or other income-generating activities.

in subsistence, low productivity propositions. The dynamic sub-sectors include **agro-processing industries,** food processing industries, leather industry, tourism, etc. Those sectors which have the potential but seriously lack infrastructure and other support include traditional household-based industries like pottery, crafts, handlooms etc. Though majority of rural women find employment in agriculture with men looking for non-farm employment, in recent times, women have also begun to look for non-farm jobs (see Box 6.2).

Animal Husbandry: In India, the farming community uses the mixed crop-livestock farming system — cattle, goats, fowl are the widely held species. Livestock production provides increased stability in income, food security, transport, fuel and nutrition for the family without disrupting other food-producing activities. Today, livestock sector alone provides alternate livelihood options to over 70 million small and marginal farmers including landless labourers. A significant number of women also find employment in the livestock sector.

Chart 6.1 shows the distribution of livestock in India. Poultry accounts for the largest share with 42 per cent followed by others. Other animals which include camels, asses, horses, ponies

Chart 6.1: Distribution of Livestock in India, 1997

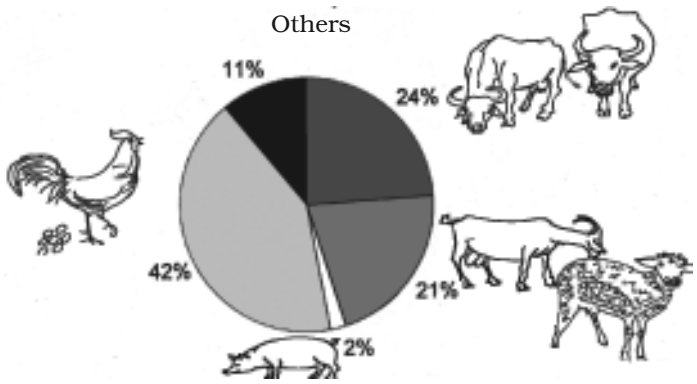


Fig. 6.3 *Sheep rearing — an important income augmenting activity in rural areas*

and mules are in the lowest rung. India had about 287 million cattle, including 90 million buffaloes, in 1997. Performance of the Indian dairy sector over the last three decades has been quite impressive. Milk production in the country has increased by more than four times between 1960-2002. This can be attributed mainly to the successful implementation of 'Operation Flood' from 1966 onwards; it is a system whereby all the farmers can pool their milk produce according to different grading (based on quality) and the same is processed and marketed to urban centres through cooperatives. In this system the farmers are assured of a fair price and income from the supply of milk to urban markets. Gujarat state is held as a success story in the efficient implementation of milk cooperatives which has been emulated by many states. Meat, eggs, wool and other by-products are also emerging as important productive sectors for diversification.

Fisheries: The fishing community regards the water body as 'mother' or 'provider'. The water bodies consisting of sea, oceans, rivers, lakes, natural aquatic ponds, streams etc. are, therefore, an integral and life-giving source for the fishing community. In India, after progressive increase in budgetary allocations and introduction of new technologies in fisheries and aquaculture, the development of fisheries has come a long way. Presently, fish production from inland sources contributes about 49 per cent to the total fish production and the balance 51 per cent comes from the marine sector (sea and oceans). Today total fish production accounts for 1.4 per cent of the total GDP. Among states, Kerala, Gujarat, Maharashtra and Tamil Nadu are the major producers of marine products. The overall socio-economic status of fishermen is comparatively lower than that of other backward sectors of our economy. Rampant underemployment, low per capita earnings, absence of mobility of labour to other sectors and a high rate of illiteracy and indebtedness are some of the major problems faced by these communities. Even though women are not involved in active fishing, about 60 per cent of the workforce in export marketing and 40 per cent in internal marketing are women. There is a need to increase credit facilities —cooperatives and SHGs — for fisherwomen to meet the working capital requirements for marketing.

Horticulture: Blessed with a varying climate and soil conditions, India has

adopted growing of diverse horticultural crops such as fruits, vegetables, tuber crops, flowers, medicinal and aromatic plants, spices and plantation crops. These crops play a vital role in providing food and nutrition, besides addressing employment concerns. The period between 1991-2003 is also called an effort to heralding a 'Golden Revolution' because during this period, the planned investment in horticulture became highly productive and the sector emerged as a sustainable livelihood option. India has emerged as a world leader in producing a variety of fruits like mangoes, bananas, coconuts, cashew nuts and a number of spices and is the second largest producer of fruits and vegetables. Economic condition of many farmers engaged in horticulture has improved and it has become a means of improving livelihood for many unprivileged classes too. Flower harvesting, nursery maintenance, hybrid seed production and tissue culture, propagation of fruits and flowers and food processing are highly remunerative employment options for women in rural areas. It has been estimated that this sector provides employment to around 19 per cent of the total labour force.

Fig. 6.5 *Women in rural households take up bee-keeping as an entrepreneurial activity*

Though, in terms of numbers, our livestock population is quite impressive but its productivity is quite low as compared to other countries. It requires improved technology and promotion of good breeds of animals to enhance productivity. Improved veterinary care and credit facilities to small and marginal farmers and landless labourers would enhance sustainable livelihood options through livestock production. Production of fisheries has already increased substantially.

Fig. 6.4 *Poultry has the largest share of total livestock in India*

However problems related to over-fishing and pollution need to be regulated and controlled. Welfare programmes for the fishing community have to be reoriented in a manner which can provide long-term gains and sustenance of livelihoods. Horticulture has emerged as a successful sustainable livelihood option and needs to be encouraged significantly. Enhancing its role requires investment in infrastructure like electricity, cold storage systems, marketing linkages, small-scale processing units and technology improvement and dissemination.

Other Alternate Livelihood Options: We know that IT has revolutionised many sectors in the Indian economy. There is broad consensus that IT will play a critical role in achieving sustainable development and food security in the twenty-first century. Many examples justify this observation, such as the ability of governments to predict areas of food insecurity and vulnerability using appropriate information and software tools so that action can be taken to prevent or reduce the likelihood of an emergency. It also has a positive impact on the agriculture sector as it disseminates information regarding emerging technologies and its applications, prices, weather and soil conditions for growing different crops etc. Most importantly, it has ushered in a knowledge economy that is a thousand times more powerful than the industrial revolution. Though IT is, by itself, no catalyst of change but it can act as a tool for releasing the creative potential and knowledge embedded in our people. It also has potential of employment generation in rural areas. Experiments with IT and its application to rural development are carried out in different parts of India (see Box 6.3).

6.6 Sustainable Development and Organic Farming

In recent years, awareness of the harmful effect of chemical-based fertilisers and pesticides on our health is on a rise. Conventional agriculture relies heavily on chemical fertilisers and toxic pesticides etc., which enter the food supply, penetrate the water

Box 6.3: Every Village — a Knowledge Centre

M.S. Swaminathan Research Foundation, an institution located in Chennai, Tamil Nadu, with support from Sri Ratan Tata Trust, Mumbai, has established the Jamshedji Tata National Virtual Academy for Rural Prosperity. The Academy envisaged to identify a million grassroot knowledge workers who will be enlisted as Fellows of the Academy. The programme provides an info-kiosk (PC with Internet and video conferencing facility, scanner, photocopier, etc.) at a low cost and trains the kiosk owner; the owner then provides different services and tries to earn a reasonable income. The Government of India has decided to join the alliance by providing financial support of Rs 100 crore.

Box 6.4: Organic Food

Organic food is growing in popularity across the world. Many countries have around 10 per cent of their food system under organic farming. There are many retail chains and supermarkets which are accorded with **green status** to sell organic food. Moreover, organic foods command higher prices of around 10-100 per cent than conventional ones.

sources, harm the livestock, deplete the soil and devastate natural eco-systems. Efforts in evolving technologies which are eco-friendly are essential for sustainable development and one such technology which is eco-friendly is organic farming. In short, organic agriculture is a whole system of farming that restores, maintains and enhances the ecological balance. There is an increasing demand for organically grown food to enhance food safety throughout the world (see Box 6.4).

Benefits of Organic Farming: Organic agriculture offers a means to substitute costlier agricultural inputs (such as HYV seeds, chemical fertilisers, pesticides etc.) with locally produced organic inputs that are cheaper and thereby generate good returns on investment. Organic agriculture also generates incomes through international exports as the demand for organically grown crops is on a rise. Studies across countries have shown that organically grown food has more nutritional value than chemical farming thus providing us with healthy foods. Since organic farming requires more labour input than conventional farming, India will find organic farming an attractive proposition. Finally, the produce is pesticide-free and produced in an environmentally sustainable way (see Box 6.5).

Box 6.5: Organically Produced Cotton in Maharashtra

In 1995, when Kisan Mehta of *Prakruti* (an NGO) first suggested that cotton, the biggest user of chemical pesticides, could be grown organically, the then Director of the Central Institute for Cotton Research, Nagpur, famously remarked, "Do you want India to go naked?" At present, as many as 130 farmers have committed 1,200 hectares of land to grow cotton organically on the International Federation of Organic Agriculture Movement's standards. The produce was later tested by the German Accredited Agency, AGRECO, and found to be of high quality. Kisan Mehta feels that about 78 per cent of Indian farmers are marginal farmers owning about less than 0.8 hectare but accounting for 20 per cent of India's cultivable land. Therefore, organic agriculture is more profitable in terms of money and soil conservation in the long run.

Source: *Lyla Bavadam, A Green Alternative, Frontline, 29 July 2005.*

Popularising organic farming requires awareness and willingness on the part of farmers to adapt to new technology. Inadequate infrastructure and the problem of marketing the products are major concerns which need to be addressed apart from an appropriate agriculture policy to promote organic farming. It has been observed that the yields from organic farming are less than modern agricultural farming in the initial years. Therefore, small and marginal farmers may find it difficult to adapt to large-scale production. Organic produce may also have more blemishes and a shorter shelf life than sprayed produce. Moreover choice in production of off-season crops is quite limited in organic farming. Nevertheless, organic farming helps in sustainable development of agriculture and India has a clear advantage in producing organic products for both domestic and international markets.

6.7 Conclusion

It is clear that until and unless some spectacular changes occur, the rural sector might continue to remain backward. There is a greater need today to make rural areas more vibrant through diversification into dairying, poultry, fisheries, vegetables and fruits and linking up the rural production centres with the urban and foreign (export) markets to realise higher returns on the investments for the products. Moreover, infrastructure elements like credit and marketing, farmer-friendly agricultural policies and a constant appraisal and dialogue between farmers' groups and state agricultural departments are essential to realise the full potential of the sector.

Today we cannot look at the environment and rural development as two distinct subjects. There is need to invent or procure alternate sets of eco-friendly technologies that lead to sustainable development in different

Work These Out

- Make a list of five popular items that are organically produced in India.
- Visit a nearby super market, vegetable shop and/or a departmental shop. Identify a few products. Prepare a chart comparing a few goods that are produced organically and in the normal way on the basis of their prices, shelf life, quality and the kind of advertisement through which they are popularised.
- Visit a horticultural farm in the nearby locality. Collect the details of goods that they cultivate on the farm. They could have diversified their cropping patterns. Discuss with them the merits and demerits of the diversification.

circumstances. From these, each rural community can choose whatever will suit its purpose. First of all, then, we need to learn from, and also try out when found relevant, practices from the available set of 'best practice' illustrations (which means success stories of rural development experiments that have already been carried out in similar conditions in different parts of India), to speed up this process of 'learning by doing'.

Recap

- Rural development is quite a comprehensive term but it essentially means a plan of action for the development of areas which are lagging behind in socio-economic development.
- There is a need for improving the quantity and quality of infrastructure in rural areas such as banking, marketing, storage, transport and communications etc. to realise its true potential.
- Diversification towards new areas such as livestock, fisheries and other non-agricultural activities is necessary not only to reduce the risk from agriculture sector but also to provide productive sustainable livelihood options to our rural people.
- The importance of organic farming as an environmentally sustainable production process is on a rise and needs to be promoted.

EXERCISES

1. What do you mean by rural development? Bring out the key issues in rural development.
2. Discuss the importance of credit in rural development.
3. Explain the role of micro-credit in meeting credit requirements of the poor.
4. Explain the steps taken by the government in developing rural markets.
5. Why is agricultural diversification essential for sustainable livelihoods?

6. Critically evaluate the role of the rural banking system in the process of rural development in India.
7. What do you mean by agricultural marketing?
8. Mention some obstacles that hinder the mechanism of agricultural marketing.
9. What are the alternative channels available for agricultural marketing? Give some examples.
10. Explain the term 'Golden Revolution'.
11. Explain four measures taken by the government to improve agricultural marketing.
12. Explain the role of non-farm employment in promoting rural diversification.
13. Bring out the importance of animal husbandry, fisheries and horticulture as a source of diversification.
14. 'Information technology plays a very significant role in achieving sustainable development and food security' — comment.
15. What is organic farming and how does it promote sustainable development?
16. Identify the benefits and limitations of organic farming.
17. Enlist some problems faced by farmers during the initial years of organic farming.

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7

EMPLOYMENT : GROWTH, INFORMALISATION AND OTHER ISSUES

After studying this chapter, the learners will

- understand a few basic concepts relating to employment such as economic activity, worker, workforce and unemployment
- understand the nature of participation of men and women in various economic activities in various sectors
- know the nature and extent of unemployment
- assess the initiatives taken by the government in generating employment opportunities in various sectors and regions.

> ***What I object to, is the 'craze' for machinery, not machinery as such. The craze is for what they call labour-saving machinery. Men go on 'saving labour' till thousands are without work and thrown on the open streets to die of starvation...***
>
> ***Mahatma Gandhi***

7.1 Introduction

People do a variety of work. Some work on farms, in factories, banks, shops and many other workplaces; yet a few others work at home. Work at home includes not only traditional work like weaving, lace making or variety of handicrafts but also modern jobs like programming work in the IT industry. Earlier factory work meant working in factories located in cities whereas now technology has enabled people to produce those factory-based goods at home in villages.

Fig. 7.1 *Multinational companies sell footballs made in the houses of Jalandhar, Punjab*

Why do people work? Work plays an important role in our lives as individuals and as members of society. People work for 'earning' a living. Some people get, or have, money by inheriting it, not working for it. This does not completely satisfy anybody. Being employed in work gives us a sense of self-worth and enables us to relate ourselves meaningfully with others. Every working person is actively contributing to national income and hence, the development of the country by engaging in various economic activities – that is the real meaning of 'earning' a living. We do not work only for ourselves; we also have a sense of accomplishment when we work to meet the requirements of those who are dependent on us. Having recognised the importance of work, Mahatma Gandhi insisted upon education and training through a variety of works including craft.

Studying about working people gives us insights into the quality and nature of employment in our country and helps in understanding and planning our human resources. It helps us to analyse the contribution made by different industries and sectors towards national income. It also helps us to address many social issues such as exploitation of marginalised sections of the society, child labour etc.

7.2 Workers and Employment

What is employment? Who is a worker? When a farmer works on fields, he or she produces food grains and raw materials for industries. Cotton becomes cloth in textile mills and in powerlooms. Lorries transport goods from one place to another. We know that the total money value of all such goods and services produced in a country in a year is called its gross domestic product for that year. When we also consider what we pay for our imports and get from our exports we find that there is a net earning for the country which may be positive (if we have exported more in value terms than imported) or negative (if imports exceeded exports in value terms) or zero (if exports and imports were of the same value). When we add this earning (plus or minus) from foreign transactions, what we get is called the country's gross national product for that year.

Those activities which contribute to the gross national product are called economic activities. All those who are engaged in economic activities, in whatever capacity — high or low, are workers. Even if some of them temporarily abstain from work due to illness, injury or other physical disability, bad weather, festivals, social or religious functions, they are also workers. Workers also include all those who help the main workers in these activities. We generally think of only those who are paid by an employer for their work as workers. This is not so. Those who are self-employed are also workers.

The nature of employment in India is multifaceted. Some get employment throughout the year; some others get employed for only a few months in a year. Many workers do not get fair wages for their work. While estimating the number of workers, all those who are engaged in economic activities are included as employed. You might be interested in knowing the number of people actively engaged in various economic activities. During 1999-2000, India had about a 400 million strong workforce. Since majority of our people reside in rural areas, the proportion of workforce residing there

Work This Out

- In your house or neighbourhood, you might come across many women who, even though they have technical degrees and diplomas and also free time to go to work, do not go to work. Ask them the reasons for not going to work. List all of them and discuss in the classroom whether they should go for work and why, and also ways by which they could be sent for work. Some social scientists argue that housewives working at home without getting paid for that work must also be regarded as contributing to the gross national product and therefore, as engaged in an economic activity. Would you agree?

is higher. The rural workers constitute about three-fourth of this 400 million. Men form the majority of workforce in India. About 70 per cent of the workers are men and the rest are women (men and women include child labourers in respective sexes). Women workers account for one-third of the rural workforce whereas in urban areas, they are just one-fifth of the workforce. Women carry out works like cooking, fetching water and fuelwood and participate in farm labour. They are not paid wages in cash or in the form of grains; at times they are not paid at all. For this reason, these women are not categorised as workers. Economists have argued that these women should also be called workers.

7.3 Participation of People in Employment

Worker-population ratio is an indicator which is used for analysing the employment situation in the country. This ratio is useful in knowing the proportion of population that is actively contributing to the production of goods and services of a country. If the ratio is higher, it means that the engagement of people is greater; if the ratio for a country is medium, or low, it means that a very high proportion of its population is not involved directly in economic activities.

You might have already studied, in lower classes, the meaning of the term 'population'. Population is defined as the total number of people who reside in a particular locality at a particular point of time. If you want to know the worker-population ratio for India, divide the total number of workers in India by the population in India and multiply it by 100, you will get the worker-population ratio for India.

If you look at Table 7.1, it shows the different levels of participation of people in economic activities. For every 100 persons, about 40 (by rounding off 39.5) are workers in India. In urban areas, the proportion is about 34 whereas in rural India, the ratio is about 42. Why is there such a difference? People in rural areas have limited resources to earn a higher income and participate more in the employment market. Many do not go to schools, colleges and other training institutions. Even if some go, they discontinue in the middle to join the workforce; whereas, in urban areas, a considerable section is able to study in various educational institutions. Urban people have a variety of employment opportunities. They look for the appropriate job to suit their qualifications and skills. In rural areas, people cannot stay at home as their economic condition may not allow them to do so.

TABLE 7.1

Worker-Population Ratio in India, 1999-2000

Sex	*Worker Population Ratio*		
	Total	*Rural*	*Urban*
Men	52.7	53.1	51.8
Women	25.4	29.9	13.9
Total	**39.5**	**41.7**	**33.7**

Work These Out

- Any study of employment must start with a review of the worker-population ratios — why?
- In some communities, you might have noticed that even if the males do not earn a high income, they do not send women to work. Why?

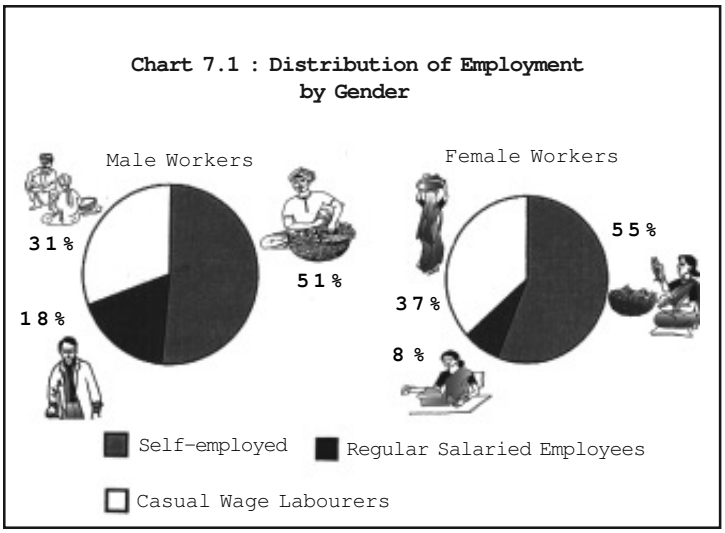
Compared to females, more males are found to be working. The difference in participation rates is very large in urban areas: for every 100 urban females, only about 14 are engaged in some economic activities. In rural areas, for every 100 rural women about 30 participate in the employment market. Why are women, in general, and urban women, in particular, not working? It is common to find that where men are able to earn high incomes, families discourage female members from taking up jobs.

Going back to what has already been mentioned above, many activities for the household engaged in by women are not recognised as productive work. This narrow definition of work leads to non-recognition of women's work and, therefore, to the underestimation of the number of women workers in the country. Think of the women actively engaged in many activities within the house and at family farms who are not paid for such work. As they certainly contribute to the maintenance of the household and farms, do you think that their number should be added to the number of women workers?

7.4 Self-employed and Hired Workers

Does the worker-population ratio say anything about workers' status in society or about the working conditions? By knowing the status with which a worker is placed in an enterprise, it may be possible to know one dimension — quality of employment in a country. It also enables us to know the attachment a worker has with his

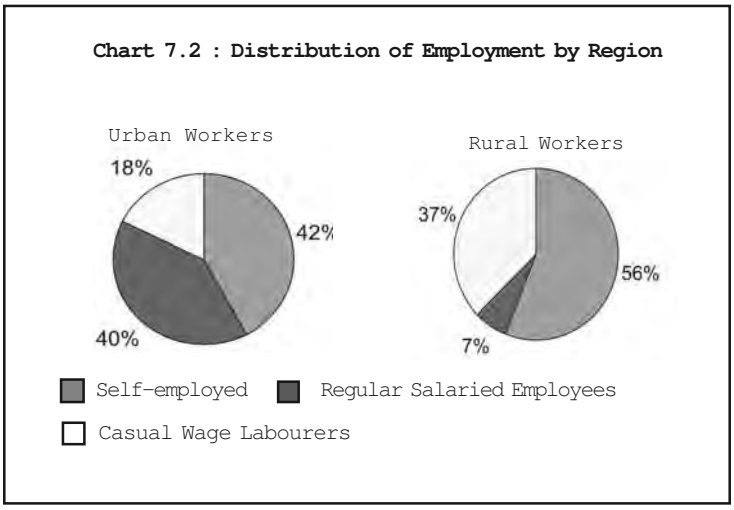
Fig. 7.2 *Brick-making: a form of casual work*



or her job and the authority she or he has over the enterprise and over other co-workers.

Let us take three workers from the construction industry — a cement shop owner, a construction worker and a civil engineer of a construction company. Since the status of each one of them is different from another, they are also called differently. Workers who own and operate an enterprise to earn their livelihood are known as **self-employed**. Thus the cement shop owner is self-employed. More than half the workforce in India belongs to this category. The construction workers are known as **casual wage labourers**; they account for 33 per cent of India's workforce. Such labourers are casually engaged in others' farms and, in return, get a remuneration for the work done. Workers like the civil engineer working in the construction company account for 15 per cent of India's workforce. When a worker is engaged by someone or an enterprise and paid his or her wages on a regular basis, they are known as **regular salaried employees**.

Look at Chart 7.1: you will notice that self-employment is a major source of livelihood for both men and women as this category accounts for more than 50 per cent of the workforce in both diagrams. Casual wage work is the second major source for both men and women, more so for the latter (37 per cent). When it comes to regular



salaried employment, men are found to be so engaged in greater proportion. They form 18 per cent whereas women form only 8 per cent. One of the reasons could be skill requirement. Since regular salaried jobs require skills and a higher level of literacy, women might not have been engaged to a great extent.

When we compare the distribution of workforce in rural and urban areas in Chart 7.2 you will notice that the self-employed and casual wage labourers are found more in rural areas than in urban areas. In the latter, both self-employed and regular wage salaried jobs are greater. In the former, since majority of those depending on farming own plots of land and cultivate independently, the share of self-employed is greater.

The nature of work in urban areas is different. Obviously everyone cannot run factories, shops and offices of various types. Moreover enterprises in urban areas require workers on a regular basis.

Work These Out

- We generally think that only those who are doing paid work regularly or casually such as agricultural labourers, factory workers, those who work in banks and other offices as assistants and clerks are workers. From the above discussion, you must have understood that those who are self-employed such as pavement vegetable vendors, professionals such as lawyers, doctors and engineers are also workers. Mark (a), (b) and (c) against self-employed, regular salaried employees and casual wage labourers respectively:
  1. Owner of a saloon
  2. Worker in a rice mill who is paid on daily basis but employed regularly
  3. Cashier in State Bank of India
  4. Typist working in a state government office on a daily wage basis but paid monthly
  5. A handloom weaver
  6. Loading worker in wholesale vegetable shop
  7. Owner of a cool drinks shop which sells Pepsi, Coca Cola and Mirinda
  8. Nurse in a private hospital who gets monthly salary and has been working regularly for the past 5 years.
- Economists point out that casual wage labourers are the most vulnerable among the three categories. Could you locate who these workers are and where they are found and why?
- Can we say that the self-employed earn more than the casual wage labourers or regular salaried employees? Identify a few other indicators of quality of employment.

7.5 Employment in Firms, Factories and Offices

Fig. 7.3 *Garment workers: upcoming factory employment for women*

In the course of economic development of a country, labour flows from agriculture and other related activities to industry and services. In this process, workers migrate from rural to urban areas. Eventually, at a much later stage, the industrial sector begins to lose its share of total employment as the service sector enters a period of rapid expansion. This shift can be understood by looking at the distribution of workers by industry. Generally, we divide all economic activities into eight different industrial divisions. They are (i) Agriculture (ii) Mining and Quarrying (iii) Manufacturing (iv) Electricity, Gas and Water Supply (v) Construction (vi) Trade (vii) Transport and Storage and (viii) Services. For simplicity, all the working persons engaged in these divisions can be clubbed into three major sectors viz. (a) primary sector which includes (i) and (ii) (b) secondary sector which includes (iii), (iv) and (v) and (c) service sector which includes divisions (vi), (vii) and (viii). Table 7.2 shows the distribution of working persons in different industries during the year 1999-2000.

Primary sector is the main source of employment for majority of workers

TABLE 7.2

Distribution of Workforce by Industry, 1999-2000 (in %)

Industrial Category	*Place of Residence*		*Sex*		*Total*
	Rural	*Urban*	*Male*	*Female*	
Primary Sector	76.7	9.6	53.8	75.1	60.4
Secondary Sector	10.8	31.3	17.6	11.8	15.8
Tertiary/Service Sector	12.5	59.1	28.6	13.1	23.8
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Work This Out

- All newspapers have one section meant for job opportunities. Some also devote an entire supplement in a day or every week like **Opportunities** in *The Hindu* or **Ascent** in The *Times of India*. Many companies advertise vacancies for various positions. Cut those sections. Develop a table which contains four columns: whether the company is private or public, name of the post, number of posts, sector — primary, secondary or tertiary — and qualification required. Analyse the table in the classroom about jobs advertised in the newspapers.

in India. Secondary sector provides employment to only about 16 per cent of workforce. About 24 per cent of workers are in the service sector. Table 7.2 also shows that more than three-fourth of the workforce in rural India depends on agriculture and mining and quarrying. About 10 per cent of rural workers are working in manufacturing industries, construction and other divisions. Service sector provides employment to only about 13 per cent of rural workers. Agriculture and mining is not a major source of employment in urban areas where people are mainly engaged in the service sector. About 60 per cent of urban workers are in the service sector. The secondary sector gives employment to about 30 per cent of urban workforce.

Though both men and women workers are concentrated in the primary sector, women workers' concentration is very high there. More than three-fourth of the female workforce is employed in the primary sector whereas only half of males work in that sector. Men get opportunities in both secondary and service sectors.

7.6 Growth and Changing Structure of Employment

In Chapters 2 and 3, you might have studied about the planning strategies in detail. Here we will look at two developmental indicators — growth of employment and GDP. Fifty years of planned development have been aimed at expansion of the economy through increase in national product and employment.

During the period 1960-2000, Gross Domestic Product (GDP) of India grew positively and was higher than the employment growth. However, there was always fluctuation in the growth of GDP. During this period, employment grew at a stable rate of about 2 per cent.

Chart 7.3 also points at another disheartening development in the late 1990s: employment growth started declining and reached the level of growth that India had in the early stages of planning. During these years, we also find a widening gap between the growth of GDP and employment. This means that in the Indian economy, without generating employment, we have been able to produce more goods

and services. Scholars refer to this phenomenon as jobless growth.

So far we have seen how employment has grown in comparison to GDP. Now it is necessary to know how the growth pattern of employment and GDP affected different sections of workforce. From this we will also be able to understand what types of employment are generated in our country.

Let us look at two indicators that we have seen in the preceding sections — employment of people in various industries and their status. We know that India is an agrarian nation; a major section of population lives in rural areas and is dependent on agriculture as their main livelihood. Developmental strategies in many countries, including India, have aimed at reducing the proportion of people depending on agriculture.

Distribution of workforce by industrial sectors shows substantial shift from farm work to non-farm work (see Table 7.3). In 1972-73, about 74 per cent of workforce was engaged in primary sector and in 1999-2000, this proportion has declined to 60 per cent. Secondary and service sectors are showing promising future for the Indian workforce. You may notice that the shares of these sectors have increased from 11 to 16 per cent and 15 to 24 per cent respectively.

The distribution of workforce in different status indicates that over the

Chart 7.3: Growth of Employment and Gross Domestic Product, 1951-2000

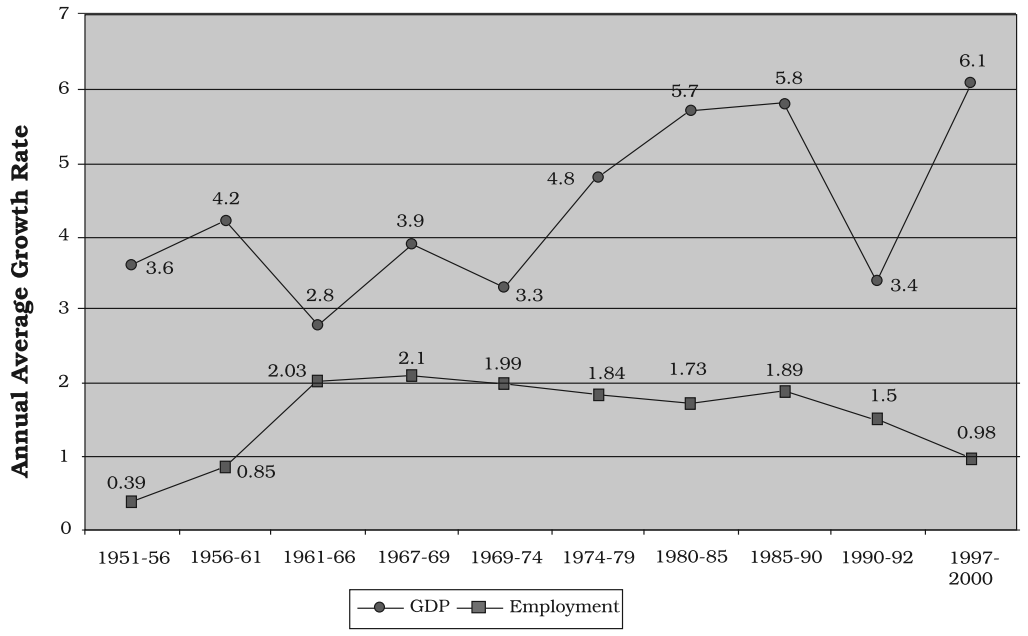
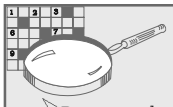


TABLE 7.3

Trends in Employment Pattern (Sector-wise and Status-wise), 1972-2000 (in %)

Item	*1972-73*	*1983*	*1993-94*	*1999-2000*
		Sector		
Primary	74.3	68.6	64	60.4
Secondary	10.9	11.5	16	15.8
Services	14.8	16.9	20	23.8
Total	**100.0**	**100.0**	**100.0**	**100.0**
		Status		
Self-employed	61.4	57.3	54.6	52.6
Regular Salaried Employees	15.4	13.8	13.6	14.6
Casual Wage Labourers	23.2	28.9	31.8	32.8
Total	**100.0**	**100.0**	**100.0**	**100.0**

last three decades (1972-2000), people have moved from self-employment and regular salaried employment to casual wage work. Yet self-employment continues to be the major employment provider. Scholars call this process of moving from self-employment and regular salaried employment to casual wage work as **casualisation of workforce**. This makes the workers highly vulnerable. How? Look at the case study of Ahmedabad in the preceding section.



Work These Out

- Do you know that maintaining employment growth at 2 per cent for a country like India is not an easy thing? Why?
- What will happen if there is no additional employment generated in the economy even though we are able to produce goods and services in the economy? How could jobless growth happen?
- Economists say that if casualisation increases the earning of the people, such phenomenon should be welcomed. Suppose a marginal farmer becomes a full-time agricultural labourer, do you think he will be happy even if he earns more in his daily wage work? Or will a permanent and regular worker of the pharmaceutical industry be happy if he becomes a daily wage labourer, even if his or her overall earnings increase? Discuss in the classroom.

7.7 Informalisation of Indian Workforce

In the previous section we have found that the proportion of casual labourers has been increasing. One of the objectives of development planning in India, since India's independence, has been to provide decent livelihood to its people. It has been envisaged that the industrialisation strategy would bring surplus workers from agriculture to industry with better standard of living as in developed countries. We have seen in the preceding section, that even after 55 years of planned development, three-fifth of Indian workforce depends on farming as the major source of livelihood.

Economists argue that, over the years, the quality of employment has been deteriorating. Even after working for more than 10-20 years, why do some workers not get maternity benefit, provident fund, gratuity and pension? Why does a person working in the private sector get a lower salary as compared to another person doing the same work but in the public sector?

You may find that a small section of Indian workforce is getting regular income. The government, through its **labour laws**, protects them in various ways. This section of the workforce forms **trade unions**, bargains with employers for better wages and other **social security** measures. Who are they? To know this we classify workforce into two categories: workers in formal and informal sectors, which are also referred to as organised and unorganised sectors. All the **public sector establishments** and those **private sector establishments** which employ 10 hired workers or more are called formal sector establishments and those who work in such establishments are formal sector workers. All other enterprises and workers working in those enterprises form the informal sector. Thus, informal sector includes millions of farmers, agricultural labourers, owners of small enterprises and people working in those enterprises as also the self-employed who do not have any hired workers.

Those who are working in the formal sector enjoy social security benefits.

Box 7.1: Formal Sector Employment

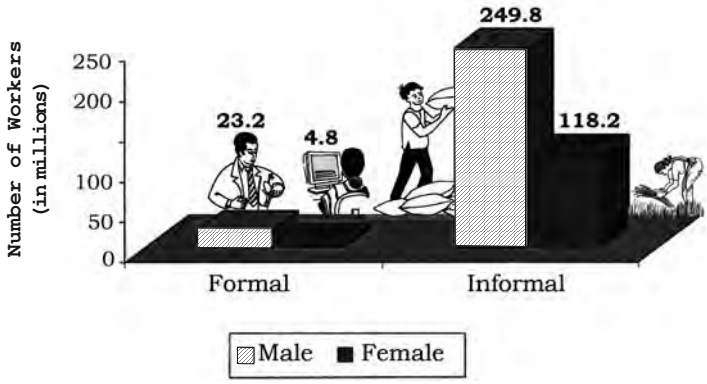
The information relating to employment in the formal sector is collected by the Union Ministry of Labour through employment exchanges located in different parts of the country. Do you know who is the major employer in the formal sector in India? In 2001, out of about 28 million formal sector workers, about 20 million workers were employed by the public sector. Here also men form the majority, as women constitute only about one-sixth of the formal sector workforce. Economists point out that the reform process initiated in the early 1990s resulted in a decline in the number of workers employed in the formal sector. What do you think?

Fig. 7.4 *Road side vending: an increasing variety of informal sector employment*

They earn more than those in the informal sector. Developmental planning envisaged that as the economy grows, more and more workers would become formal sector workers and the proportion of workers engaged in the informal sector would dwindle. But what has happened in India? Look at the following chart which gives the distribution of workforce in formal and informal sectors.

In Section 7.2, we learnt that there are about 400 million workers in the country. Look at Chart 7.4. There are about 28 million workers in the formal sector. Can you estimate the percentage of people employed in the formal sectors in the country? About seven per cent (28/400×100)! Thus, the rest 93 per cent are in the informal sector. Out of 28 million formal sector workers, only 4.8 million, that is, only 17 per cent (4.8/28×100) are women. In the informal sector, male workers account for 69 per cent of the workforce.

Chart 7.4: Workers in Formal/ Informal Sector, 1999–2000



Box 7.2: Informalisation in Ahmedabad

Ahmedabad is a prosperous city with its wealth based on the produce of more than 60 textile mills with a labour force of 1,50,000 workers employed in them. These workers had, over the course of the century, acquired a certain degree of income security. They had secure jobs with a living wage; they were covered by social security schemes protecting their health and old age. They had a strong trade union which not only represented them in disputes but also ran activities for the welfare of workers and their families. In the early 1980s, textile mills all over the country began to close down. In some places, such as Mumbai, the mills closed rapidly. In Ahmedabad, the process of closure was long drawn out and spread over 10 years. Over this period, approximately over 80,000 permanent workers and over 50,000 non-permanent workers lost their jobs and were driven to the informal sector. The city experienced an economic recession and public disturbances, especially communal riots. A whole class of workers was thrown back from the middle class into the informal sector, into poverty. There was widespread alcoholism and suicides, children were withdrawn from school and sent to work.

Change in the balance of power in a house: an unemployed mill worker peeling garlic whereas his wife has a new job of beedi rolling.

Source: *Renana Jhabvala, Ratna M. Sudarshan and Jeemol Unni (Ed.) Informal Economy at Centre Stage: New Structures of Employment, Sage Publications, New Delhi, 2003, pp.265.*

Since the late 1970s, many developing countries, including India, started paying attention to enterprises and workers in the informal sector as employment in the formal sector is not growing. Workers and enterprises in the informal sector do not get regular income; they do not have any protection or regulation from the government. Workers are dismissed without any compensation. Technology used in the informal sector enterprises is outdated; they also do not maintain any accounts. Workers of this sector live in slums and are squatters. Of late, owing to the efforts of the International Labour Organisation (ILO),

Work These Out

Tick (✓) mark against those which are in the informal sector

- Worker in a hotel which has seven hired workers and three family workers
- A private school teacher in a school which has 25 teachers
- A police constable
- Nurse in a government hospital
- Cycle-rickshaw puller
- The owner of a textile shop employing nine workers
- Driver of a bus company which has more than 10 buses with 20 drivers, conductors and other workers
- Civil engineer working in a construction company which has 10 workers
- Computer operator in the state government office working on a temporary basis
- A clerk in the electricity office.

the Indian government has initiated the modernisation of informal sector enterprises and provision of social security measures to informal sector workers.

7.8 Unemployment

You might have seen people looking for jobs in newspapers. Some look for a job through friends and relatives. In many cities, you might find people standing in some select areas looking for people to employ them for that day's work. Some go to factories and offices and give their bio-data and ask whether there is any vacancy in their factory or office. Many in the rural areas do not go out and

Fig. 7.5 *Unemployed mill workers waiting for casual jobs*

Fig. 7.6 *Sugar cane cutters: disguised unemployment is common in farm works*

ask for a job but stay home when there is no work. Some go to employment exchanges and register themselves for vacancies notified through employment exchanges. NSSO defines unemployment as a situation in which all those who, owing to lack of work, are not working but either seek work through employment exchanges, intermediaries, friends or relatives or by making applications to prospective employers or express their willingness or availability for work under the prevailing condition of work and remunerations. There are a variety of ways by which an unemployed person is identified. Economists define unemployed person as one who is not able to get employment of even one hour in half a day.

There are three sources of data on unemployment : Reports of Census of India, National Sample Survey Organisation's Reports of Employment and Unemployment Situation and Directorate General of Employment and Training Data of Registration with Employment Exchanges. Though they provide different estimates of unemployment, they do provide us with the attributes of the unemployed and the variety of unemployment prevailing in our country.

Do we have different types of unemployment in our economy? The situation described in the first paragraph of this section is called open unemployment. Economists call unemployment prevailing in Indian farms as disguised unemployment. What is disguised unemployment? Suppose a farmer has four acres of land and he actually needs only two workers and himself to carry out various operations on his farm in a year, but if he employs five workers and his family members such as his wife and children, this situation is known as disguised unemployment. One study conducted in the late 1950s showed about one-third of agriculture workers in India as disguisedly unemployed.

You may have noticed that many people migrate to an urban area, pick up a job and stay there for some time, but come back to their home villages as soon as the rainy season begins. Why do they do so? This is because work in agriculture is seasonal; there are no employment opportunities in the village for all months in the year. When

Fig. 7.7 *Dam construction work is a direct way of employment generation by the government*

there is no work to do on farms, men go to urban areas and look for jobs. This kind of unemployment is known as seasonal unemployment. This is also a common form of unemployment prevailing in India.

Though we have witnessed slow growth of employment, have you seen people being unemployed over a very long time? Scholars says that in India, people cannot remain completely unemployed for very long because their desperate economic condition would not allow them to be so. You will rather find them being forced to accept jobs that nobody else would do, unpleasant or even dangerous jobs in unclean, unhealthy surroundings. The government has taken many initiatives to generate acceptable employment, ensuring at least minimal safety and job satisfaction, through various measures. These will be discussed in the following section.

7.9 Government and Employment Generation

Recently the government passed an Act in Parliament known as the National Rural Employment Guarantee Act 2005. It promises 100 days of guaranteed wage employment to all adult members of rural households who volunteer to do unskilled manual work. The families, which are living below poverty line, will be covered under the scheme. This scheme is one of the many measures that the government implements to generate employment for those who are in need of jobs in rural areas.

Since independence, the Union and state governments have played an important role in generating employment or creating opportunities for employment generation. Their efforts can be broadly categorised into two — direct and indirect. In the first category, as you have seen in the preceding section, government employs people in various departments for administrative purposes. It also runs industries, hotels and transport companies and hence provides employment directly to workers.

When output of goods and services from government enterprises increases, then private enterprises that supply materials to government enterprises will also raise their output and hence increase the number of employment opportunities in the economy. For example, when a government owned steel company increases its output, it will result in direct increase in employment in that government company. Simultaneously, private companies, which supply inputs to the government steel company and purchase steel from it, will also increase their output and thus employment. This is the indirect generation of employment opportunities in the economy.

In Chapter 4, you would have noticed that many programmes that the government implements, aimed at alleviating poverty, are through employment generation. They are also known as employment generation programmes. All these programmes aim at providing not only employment but also services in areas such as primary health, primary education, rural shelter, rural drinking water, nutrition, assistance for people to buy income and employment generating assets, development of community assets by generating wage employment, construction of houses and sanitation, assistance for constructing houses, laying of rural roads, development of wastelands/degraded lands.

7.10 Conclusion

There has been a change in the structure of workforce in India. Newly emerging jobs are found mostly in the service sector. The expansion of the service sector and the advent of high technology now frequently permit a highly competitive existence for efficient small scale and often individual enterprises or specialist workers side by side with the multinationals. Outsourcing of work is becoming a common practice. It means that a big firm finds it profitable to close down some of its specialist departments (for example, legal or computer programming or customer service sections) and hand over a large number of small piecemeal jobs to very small enterprises or specialist individuals, sometimes situated even in other countries. The traditional notion of the modern factory or office, as a result, has been altering in such a manner that for many the home is becoming the workplace. All of this change has not gone in favour of the individual worker. The nature of employment has become more informal with only limited availability of social security measures to the workers. Moreover, in the last two decades, there has been rapid growth in the gross domestic product, but without simultaneous increase in employment opportunities. This has forced the government to take up initiatives in generating employment opportunities particularly in the rural areas.

Recap

- All those persons who are engaged in various economic activities and hence contribute to national product are workers.
- About two-fifth of the total population in the country is engaged in various economic activities.
- Men particularly rural men, form the major section of workforce in India.
- Majority of workers in India are self-employed. Casual wage labourers and regular salaried employees together account for less than half the proportion of India's workforce.
- About three-fifth of India's workforce depends on agriculture and other allied activities as the major source of livelihood.
- In recent years, the growth of employment has decelerated.
- Post reforms, India has been witness to employment opportunities in the service sector. These new jobs are found mostly in the informal sector and the nature of jobs is also mostly casual.
- Government is the major formal sector employer in the country.
- Acquiring skills and undergoing training are important for getting employment.
- Disguised unemployment is a common form of unemployment in rural India.
- There has been a change in the structure of the workforce in India.
- Through various schemes and policies, the government takes initiatives to generate employment directly and indirectly.

EXERCISES

1. Who is a worker?
2. Define worker-population ratio.
3. Are the following workers — a beggar, a thief, a smuggler, a gambler? Why?

4. Find the odd man out (i) owner of a saloon (ii) a cobbler (iii) a cashier in Mother Dairy (iv) a tuition master (v) transport operator (vi) construction worker.

5. The newly emerging jobs are found mostly in the _____ sector (service/manufacturing).

6. An establishement with four hired workers is known as _____ (formal/informal) sector establishment.

7. Raj is going to school. When he is not in school, you will find him working in his farm. Can you consider him as a worker? Why?

8. Compared to urban women, more rural women are found working. Why?

9. Meena is a housewife. Besides taking care of household chores, she works in the cloth shop which is owned and operated by her husband. Can she be considered as a worker? Why?

10. Find the odd man out (i) rickshaw puller who works under a rickshaw owner (ii) mason (iii) mechanic shop worker (iv) shoeshine boy.

11. The following table shows distribution of workforce in India for the year 1972-73. Analyse it and give reasons for the nature of workforce distribution. You will notice that the data is pertaining to the situation in India 30 years ago!

Place of Residence	*Workforce (in millions)*		
	Male	*Female*	*Total*
Rural	125	69	195
Urban	32	7	39

12. The following table shows the population and worker population ratio for India in 1999-2000. Can you estimate the workforce (urban and total) for India?

Region	*Estimates of Population (in crores)*	*Worker Population Ratio*	*Estimated No. of Workers (in crores)*
Rural	71.88	41.9	$\frac{71.88}{100} \times 41.9 = 30.12$
Urban	28.52	33.7	?
Total	100.40	39.5	?

13. Why are regular salaried employees more in urban areas than in rural areas?

14. Why are less women found in regular salaried employment?

15. Analyse the recent trends in sectoral distribution of workforce in India.

16. Compared to the 1970s, there has hardly been any change in the distribution of workforce across various industries. Comment.

17. Do you think that in the last 50 years, employment generated in the country is commensurate with the growth of GDP in India? How?

18. Is it necessary to generate employment in the formal sector rather than in the informal sector? Why?

19. Victor is able to get work only for two hours in a day. Rest of the day, he is looking for work. Is he unemployed? Why? What kind of jobs could persons like Victor be doing?

20. You are residing in a village. If you are asked to advice the village panchayat, what kinds of activities would you suggest for the improvement of your village which would also generate employment.

21. Who is a casual wage labourer?

22. How will you know whether a worker is working in the informal sector?

SUGGESTED ADDITIONAL ACTIVITIES

1. Select a region, say a street or colony, and divide it into 3-4 sub-regions. Conduct a survey by which you can collect the details of activity each person living there is engaged in. Derive the worker-population ratio for all the regions. Interpret the results for differences in worker-population ratio for the different sub-regions.

2. Suppose 3-4 groups of students are given different regions of a state. One region is mainly engaged in cultivation of paddy. In another region, coconut is the main plantation. The third region is a coastal region where fishing is the main activity. The fourth region has a river nearby with a lot of livestock rearing activities. Ask all the four groups to develop a report on what kind of employment could be generated in the four regions.

3. Visit the local library and ask for *Employment News,* a weekly published by the Government of India. Go through each issue for the last two months. There will be seven issues. Select 25 advertisements and

fill in the following table (expand the table as needed). Discuss the nature of jobs in the classroom.

Items	*Advertisement 1*	*Advertisement 2*
1. Name of Office		
2. Department/company		
3. Private/public/joint venture		
4. Name of the post		
5. Sector—primary/seconday/ service		
6. Number of posts/vacancies		
7. Qualification required		

4. You might notice, in your locality, a variety of works being done by the government, for example laying of roads, desilting of tanks, construction of school buildings, hospital and other government offices, construction of check dams and houses for the poor etc. Prepare a critical assessment report on one such activity. The issues covered could be the following (i) how the work was identified (ii) amount sanctioned (iii) contribution of local people, if any (iv) number of persons involved — both men and women (v) wages paid (vi) is it really required in that area and other critical comments on the implementation of the scheme under which the work is being carried out.
5. In recent years, you may have noticed that many voluntary organisations also take initiatives to generate employment in hilly and dry land regions. If you find such initiatives in your locality, visit and prepare a report.

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8

INFRASTRUCTURE

After studying this chapter, the learners will

- understand the main challenges India faces in the areas of social and economic infrastructure
- know the role of infrastructure in economic development
- understand the role of energy as a critical component of infrastructure
- understand the problems and prospects of the energy and health sectors
- understand the health infrastructure of India.

> ***"Many things we need can wait, the child cannot. To him, we cannot say, 'tomorrow'. His name is today."***
>
> ***Gabrriella Mistral—Chilean poet***
>
> ***So is the Infrastructure.***

8.1 Introduction

Have you ever thought of why some states in India are performing much better than others in certain areas? Why do Punjab, Haryana and Himachal Pradesh prosper in agriculture and horticulture? Why are Maharashtra and Gujarat industrially more advanced than others? How come Kerala, popularly known as 'God's own country', has excelled in literacy, health care and sanitation and also attracts tourists in such large numbers? Why does Karnataka's information technology industry attract world attention?

It is all because these states have better infrastructure in the areas they excel than other states of India. Some have better irrigation facilities. Others have better transportation facilities, or are located near ports which makes raw materials required for various manufacturing industries easily accessible. Cities like Bangalore in Karnataka attract many multinational companies because they provide world-class communication facilities. All these support structures, which facilitate development of a country, constitute its infrastructure. How then does infrastructure facilitate development?

8.2 What is Infrastructure?

Infrastructure provides supporting services in the main areas of industrial and agricultural production, domestic and foreign trade and commerce. These services include roads, railways, ports, airports, dams, power stations, oil and gas pipelines, telecommunication facilities, the country's educational system including schools and colleges, health system including hospitals, sanitary system including clean drinking water facilities and the monetary system including banks, insurance and other financial institutions. Some of these facilities have a direct impact on the working of the system of production while others give indirect support by building the social sector of the economy.

Fig. 8.1 *Roads* are *the missing link with growth*

Fig. 8.2 *Schools: an important infrastructure for a nation*

speedy and large-scale transport of seeds, pesticides, fertilisers and the produce by making use of modern roadways, railways and shipping facilities. Modern agriculture also has to depend on insurance and banking facilities because of its need to operate on a very large scale.

Some divide infrastructure into two categories — economic and social. Infrastructure associated with energy, transportation and communication are included in the former category whereas those related to education, health and housing are included in the latter.

Work This Out

- In your locality or neighbourhood you might be using a variety of infrastructure. List all of them. Your locality may also be requiring a few more. List them separately.

8.3 Relevance of Infrastructure

Infrastructure is the support system on which depends the efficient working of a modern industrial economy. Modern agriculture also largely depends on it for

Infrastructure contributes to economic development of a country both by increasing the productivity of the factors of production and improving the quality of life of its people. Inadequate infrastructure can have multiple adverse effects on health. Improvements in water supply and sanitation have a large impact by reducing **morbidity** (meaning proneness to fall ill) from major waterborne diseases and reducing the severity of disease when it occurs. In addition to the obvious linkage between water and sanitation and health, the quality of transport and communication infrastructure can affect access to health care. Air pollution and safety hazards connected to transportation also affect morbidity, particularly in densely populated areas.

8.4 The State of Infrastructure in India

Traditionally, the government has been solely responsible for developing the

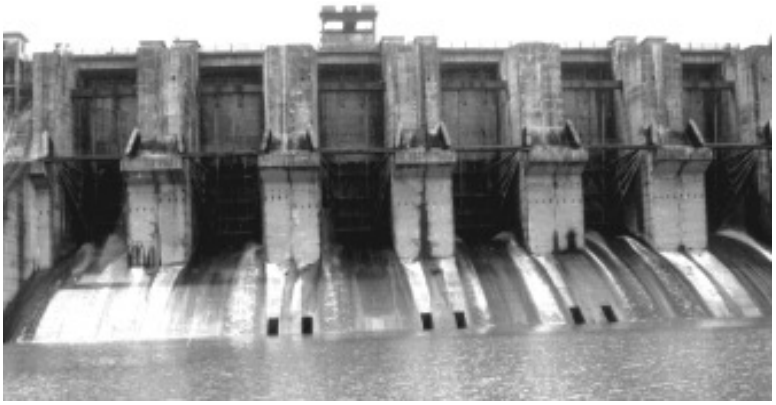


Fig. 8.3 *Dams: temples of development*

country's infrastructure. But it was found that the government's investment in infrastructure was inadequate. Today, the private sector by itself and also in joint partnership with the public sector, has started playing a very important role in infrastructure development.

A majority of our people live in rural areas. Despite so much technical progress in the world, rural women are still using bio-fuels such as crop residues, dung and fuel wood to meet their energy requirement. They walk long distances to fetch fuel, water and other basic needs. The census 2001 shows that in rural India only 56 per cent households have an electricity connection and 43 per cent still use kerosene. About 90 per cent of the rural households use bio-fuels for cooking. Tap water availability is limited to only 24 per cent rural households. About 76 per cent of the population drinks water from open sources such as wells, tanks, ponds, lakes, rivers, canals, etc. Another study conducted by the National Sample Survey Organisation noted that by 1996, access to improved sanitation in rural areas was only six per cent.

Look at Table 8.1 which shows the state of some infrastructure in India in comparison to a few other countries. Though it is widely understood that infrastructure is the foundation of development, India is yet to wake up to the call. India invests only 5 per cent

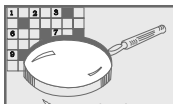
Fig. 8.4 *Safe drinking water with pucca house: still a dream*

TABLE 8.1

Some Infrastructure in India and other Countries, 2003

Country	*Investment in Infrastructure as a % GDP*	*Access to Safe Drinking Water (%)*	*Access to Improved Sanitation (%)*	*Mobile Users/ 1000 People*	*Phone Lines/ 1000 People*	*Power Generation (kw 1000)*
China	20	75	38	66	113	230
Hong Kong	4	100	100	817	560	1630
India	**5**	**84**	**28**	**4**	**33**	**107**
Korea	7	92	63	583	449	1067
Pakistan	2	90	62	2	20	109
Singapore	5	100	100	684	528	1887
Indonesia	14	76	66	18	28	97

Source: *World Development Report 2005, The World Bank, Washington DC, 2004.*



Work These Out

- While reading newspapers you will come across terms like *Bharat nirman*, Special Purpose Vehicle (SPV), Special Economic Zones (SEZ), Build Operate Transfer (BOT), Private Public Partnership (PPP) etc. Make a scrapbook of news items containing these terms. How are these terms related to infrastructure?
- Using the references at the end of the chapter, collect the details of other infrastructure.

of its GDP on infrastructure, which is far below that of China and Indonesia.

Some economists have projected that India will become the third biggest economy in the world a few decades from now. For that to happen, India will have to boost its infrastructure investment. In any country, as the income rises, the composition of infrastructure requirements changes significantly. For low-income countries, basic infrastructure services like irrigation, transport and power are more important. As economies mature and most of their basic consumption demands are met, the share of agriculture in the economy shrinks and more service related infrastructure is required. This is why the share of power and telecommunication infrastructure is greater in high-income countries.

Thus, development of infrastructure and economic development go hand in hand. Agriculture depends, to a considerable extent, on the adequate expansion and development of irrigation facilities. Industrial progress depends on the development of power and electricity generation, transport and communications. Obviously, if proper attention is not paid to the development of infrastructure, it is likely to act as a

severe constraint on economic development. In this chapter the focus will be on only two kinds of infrastructure—those associated with energy and health.

Fig. 8.6 *Bullock carts still play a crucial role in rural transportation market*

8.5 Energy

Why do we need energy? In what forms is it available? Energy is a critical aspect of the development process of a nation. It is, of course, essential for industries. Now it is used on a large scale in agriculture and related areas like production and transportation of fertilisers, pesticides and farm equipment. It is required in houses for cooking, household lighting and heating. Can you think of producing a commodity or service without using energy?

Sources of Energy: There are commercial and non-commercial sources of energy. Commercial sources are coal, petroleum and electricity as they are bought and sold. They account for over 50 per cent of all energy sources consumed in India. Non-commercial sources of energy are firewood, agricultural waste and dried dung. These are non-commercial as they are found in nature/forests.

While commercial sources of energy are generally exhaustible (with the exception of hydropower), non-commercial sources are generally renewable. More than 60 per cent of Indian households depend on traditional sources of energy for meeting their regular cooking and heating needs.

Fig.8.5 *Fuel wood is the major source of energy*

Non-conventional Sources of Energy: Both commercial and non-commercial sources of energy are known as

conventional sources of energy. There are three other sources of energy which are commonly termed as non-conventional sources — solar energy, wind energy and tidal power. Being a tropical country, India has almost unlimited potential for producing all three types of energy if some appropriate cost effective technologies that are already available are used. Even cheaper technologies can be developed.

Fig. 8.8 *Solar energy has great prospects*

Consumption Pattern of Commercial Energy: At present, commercial energy consumption makes up about 65 per cent of the total energy consumed in India. This includes coal with the largest share of 55 per cent, followed by oil at 31 per cent, natural gas at 11 per cent and hydro energy at 3 per cent. Non-commercial energy sources consisting of firewood, cow dung and agricultural wastes account for over 30 per cent of the total energy consumption. The critical feature of India's energy sector, and its linkages to the economy, is the import-dependence on crude and petroleum products, which is likely to grow to more than 100 per cent in the near future.

Fig. 8.7 *Wind mill : another source of generating power*

The sectoral pattern of consumption of commercial energy is given in Table 8.2. The transport sector was the largest consumer of commercial energy in 1953-54. However, there has been continuous fall in the share of the transport sector while the share of the industrial sector has been increasing. The share of oil and gas is highest among all commercial energy consumption. With the rapid rate of

TABLE 8.2

Trends in Sectoral Share of Commercial Energy Consumption (in %)

Sector	*1953-54*	*1970-71*	*1990-91*	*1996-97*
Household	10	12	12	12
Agriculture	01	03	08	09
Industries	40	50	45	42
Transport	28	22	22	22
Others	5	07	13	15
Total	**100**	**100**	**100**	**100**

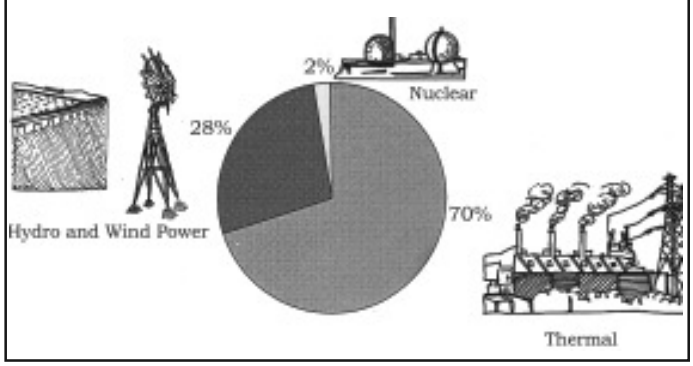
Source: *Ninth Five year Plan, Vol. II Chapter 6, Planning Commission, Government of India, New Delhi.*

economic growth, there has been a corresponding increase in the use of energy.

Power/Electricity: The most visible form of energy, which is often identified with progress in modern civilization, is power, commonly called electricity; it is one of the most critical components of infrastructure that determines the economic development of a country. The growth rate of demand for power is generally higher than the GDP growth rate. Studies point that in order to have 8 per cent GDP growth per annum, power supply needs to grow around 12 per cent annually.

Electricity is a secondary form of energy produced from primary energy resources including coal, hydro-carbons, hydro energy, nuclear energy, renewable energy etc. Primary energy consumption takes into account the direct and indirect consumption of fuels. It cannot give a complete picture in respect of the ultimate consumption of energy by consumers. The secondary sources in India consist of coal, oil, electricity and natural gas.

Chart 8.1: Different Sources of Engery



In India, in 2003-04, thermal sources accounted for almost 70 per cent of the power generation capacity. Hydro, wind and nuclear sources accounted for 28 and 2.4 per cent respectively. India's energy policy encourages two energy sources — hydel and wind — as they do not rely on fossil fuel and, hence,

Work These Out

- Among other sources of energy, you would have noticed that a marginal share of energy comes from nuclear power. Why? Scholars point out that with rising oil and coal costs, nuclear power is the best option. Discuss or debate in your class.
- Solar energy, wind power and power produced from tides are going to be future sources of energy. What are their comparative merits and demerits? Discuss in the class.

avoid carbon emissions. This has resulted in faster growth of electricity produced from these two sources.

Atomic energy is an important source of electric power; it has environmental advantages and is also likely to be economical in the long run. At present, nuclear energy accounts for only 2.4 per cent of total primary energy consumption, against a global average of 13 per cent. This is far too low.

Some Challenges in the Power Sector: Electricity generated by various power stations is not consumed entirely by ultimate consumers; a part is consumed by power station auxiliaries. Also, while transmitting power, a portion is lost in transmission. What we get in our houses, offices and factories is the net availability.

Some of the challenges that India's power sector faces today are (i) India's installed capacity to generate electricity is not sufficient to feed an annual economic growth of 7 per cent. In order to meet the growing demand for electricity, between 2000 and 2012, India needs to add 1,00,000 MW of new capacity, whereas, at present, India is able to add only 20,000 MW a year. Even the installed capacity is under-utilised because plants are not run properly (ii) State Electricity Boards (SEBs), which distribute electricity, incur losses which exceed Rs 500

Box 8.1: Making a Difference

Thane city is acquiring a brand new image — an environment friendly make over. Large-scale use of solar energy, which was considered a somewhat far-fetched concept, has brought in real benefits and results in cost and energy saving. It is being applied to heat water, power traffic lights and advertising hoardings. And leading this unique experiment is the Thane Municipal Corporation. It has made compulsory for all new buildings in the city to install solar water heating system. (Appeared in the column, Making a Difference, *Outlook,* 01 August 2005).

- Can you suggest such other ideas to use non-conventional energy in a better way?

Box 8.2: Power Distribution: The Case of Delhi

Since independence, power management in the capital has changed hands four times. **The Delhi State Electricity Board (DSEB)** was set up in 1951. This was succeeded by the **Delhi Electric Supply Undertaking (DESU**) in 1958. **The Delhi Vidyut Board (DVB)** came into existence as SEB in February 1997. Now it rests with two leading power majors of the country following the privatisation of the DVB. Reliance Energy Ltd owned **BSES** manages power distribution in two-thirds of Delhi through its two companies (known as **DISCOMS**): south and west areas are handled by **BSES Rajdhani Power Limited** whereas **BSES Yamuna Power Limited** looks after central and east areas. **The Tata Power-owned NDPL** distributes power to the north and the north-west of the capital. Both the discoms further have 23 (220 KV) grids between them to supply power to the approximately 28 lakh consumers in the capital area. The tariff structure and other regulatory issues are monitored by the **Delhi Electricity Regulatory Commission (DERC)**. Though it was expected that there will be greater improvement in power distribution and the consumers will benefit in a major way, experience shows unsatisfactory results.

billion. This is due to transmission and distribution losses, wrong pricing of electricity and other inefficiencies. Some scholars also say that distribution of electricity to farmers is the main reason for the losses; electricity is also stolen in different areas which also adds to the woes of SEBs (iii) private sector power generators are yet to play their role in a major way; same is the case with foreign investors (iv) there is general public unrest due to high power tariffs and prolonged power cuts in different parts of the country (v) thermal power plants which are the mainstay of India's power sector are facing shortage of raw material and coal supplies.

Thus, continued economic development and population growth are driving the demand for energy faster than what India is producing currently.

Box 8.3: Saving Energy : Promoting the Case of Compact Fluorescent Lamps (CFL)

According to the Bureau of Energy Efficiency (BEE), CFLs consume 80 per cent less power as compared to ordinary bulbs. As put by a CFL manufacturer, Indo-Asian, replacement of one million 100-watt bulbs with 20 watt CFLs can save 80 megawatt in power generation. This amounts to saving Rs 400 crore at the rate of institution cost of Rs 5 crore per megawatt.

Source: *Use Common Sense to Solve Power Crisis, by Naresh Minocha in Tehelka, 01 October 2005.*

Work These Out

- What kind of energy do you use in your house? Find out from your parents the amount they spend in a month on different types of energy.
- Who supplies power to you and where is it generated? Can you think of other cheaper alternative sources which could help in lighting your house or cooking food or for travelling to far away places?
- Look at the following table. Do you think energy consumption is an effective indicator of development?

Country	*Per Capita Income (in US dollars) in 2003 (ppp)*	*Per Capita Consumption of Energy (kg of oil equivalent) in 2001*
India	2,880	515
Indonesia	3,210	729
Egypt	3,940	737
U.K.	27,650	3982
Japan	28,620	4099
U.S.A.	37,500	7996

Source: *World Development Report 2005 and World Development Indicators 2004.*

- Find out how power is distributed in your area/state. Also find out the total electricity demand of your city and how it is being met.
- You might notice people using variety of methods to save electricity and other energy. For instance, while using the gas stove, some suggestions are made by gas agencies for using the gas efficiently and economically. Discuss them with your parents and the elderly, note down the points and discuss them in class.

More public investment, better research and development efforts, exploration, technological innovation and use of renewable energy sources can ensure additional supply of electricity. Though the private sector has made some progress, it is necessary to tap this sector to come forward and produce power on a large scale. One also has to appreciate the efforts made in this regard. For example, India is already the world's fifth largest producer of wind power, with more than 95 per cent investments coming from the private sector. Greater reliance on renewable energy resources offers enormous economic, social and environmental benefits.

8.6 Health

Health is not only absence of disease but also the ability to realise one's

potential. It is a yardstick of one's well being. Health is the holistic process related to the overall growth and development of the nation. Though the twentieth century has seen a global transformation in human health unmatched in history, it may be difficult to define the health status of a nation in terms of a single set of measures. Generally scholars assess people's health by taking into account indicators like infant mortality and maternal mortality rates, life expectancy and nutrition levels, along with the incidence of communicable and non-communicable diseases.

Development of health infrastructure ensures a country of healthy manpower for production of goods and services. In recent times, scholars argue that people are entitled to health care facilities. It is the responsibility of the government to ensure the right to healthy living. Health infrastructure includes hospitals, doctors, nurses and other para-medical professionals, beds, equipment required in hospitals and a well-developed pharmaceutical industry. It is also true that mere presence of health infrastructure is not sufficient to have healthy people: the same should be accessible to all the people. Since, the initial stages of planned development, policy-makers envisaged that no individual should fail to secure medical care, curative and preventive, because of the inability to pay for it. But are we able to achieve this vision? Before we discuss various health infrastructure, let us discuss the status of health in India.

State of Health Infrastructure: The government has the constitutional obligation to guide and regulate all

Fig. 8.9 *Health infrastructure is still lacking in large parts of the country*

health related issues such as medical education, adulteration of food, drugs and poisons, medical profession, vital statistics, mental deficiency and lunacy. The Union Government evolves broad policies and plans through the Central Council of Health and Family Welfare. It collects information and renders financial and technical assistance to state governments, union territories and other bodies for implementation of important health programmes in the country.

Over the years, India has built up a vast health infrastructure and manpower at different levels. At the village level, a variety of hospitals have been set up by the government. India also has a large number of hospitals run by voluntary agencies and the private sector. These hospitals are manned by professionals and para-medical professionals trained in medical, pharmacy and nursing colleges.

Since independence, there has been a significant expansion in the physical provision of health services. During 1951-2000, the number of hospitals and dispensaries increased from 9,300 to 43,300 and hospital beds from 1.2 to 7.2 million (see Table 8.3); during 1951-99, nursing personnel increased from 0.18 to 8.7 lakh and allopathic doctors from 0.62 to 5.0 lakh. Expansion of health infrastructure has resulted in the eradication of smallpox, guinea worms and the near eradication of polio and leprosy.

Private Sector Health Infrastructure: In recent times, while the public health sector has not been so successful in delivering the goods about which we will study more in the next section, private sector has grown by leaps and bounds. More than 70 per cent of the hospitals in India are run by the private sector; they control nearly two-fifth of beds available in the hospitals. Nearly 60 per cent of dispensaries are run by the same private sector. They provide healthcare for 80 per cent of out-patients and 46 per cent of in-patients.

In recent times, private sector has been playing a dominant role in medical education and training, medical technology and diagnostics, manufacture and sale of pharmaceuticals, hospital construction and the provision of medical services. In 2001-02, there were more than 13 lakh medical enterprises employing 22 lakh people; more than 80 per cent of them are single person owned, and operated by one

TABLE 8.3

Public Health Infrastructure in India, 1951-2000

Item	*1951*	*1981*	*2000*
Hospitals	2694	6805	15888
Hospital/ dispensary beds	117000	504538	719861
Dispensaries	6600	16745	23065
PHCs	725	9115	22842
Subcentres	-	84736	137311
CHCs	-	761	3043

Source: *National Commission on Macroeconomics and Health, Ministry of Health and Family Welfare, Government of India, New Delhi, 2005.*

Box 8.5: Health System in India

India's health infrastructure and health care is made up of a three-tier system —primary, secondary and tertiary. Primary health care includes education concerning prevailing health problems and methods of identifying, preventing and controlling them; promotion of food supply and proper nutrition and adequate supply of water and basic sanitation; maternal and child health care; immunisation against major infectious diseases and injuries; promotion of mental health and provision of essential drugs.

Auxiliary Nursing Midwife (ANM) is the first person who provides primary healthcare in rural areas. In order to provide primary health care, hospitals have been set up in villages and small towns which are generally manned by a single doctor, a nurse and a limited quantity of medicines. They are known as Primary Health Centres (PHC), Community Health Centres (CHC) and sub-centres. When the condition of a patient is not managed by PHCs, they are referred to secondary or tertiary hospitals. Hospitals which have better facilities for surgery, X-ray, Electro Cardio Gram (ECG) are called secondary health care institutions. They function both as primary health care provider and also provide better healthcare facilities. They are mostly located in district headquarters and in big towns. All those hospitals which have advanced level equipment and medicines and undertake all the complicated health problems, which could not be managed by primary and secondary hospitals, come under the tertiary sector.

A health awareness meeting in progress

Polio drops being given to an infant

The tertiary sector also includes many premier institutes which not only impart quality medical education and conduct research but also provide specialised health care. Some of them are — All India Institute of Medical Science, New Delhi; Post Graduate Institute, Chandigarh; Jawaharlal Institute of Postgraduate Medical Education and Research, Pondicherry; National Institute of Mental Health and Neuro Sciences, Bangalore and All India Institute of Hygiene and Public Health, Kolkata.

Source: *Report of the National Commission on Macroeconomics and Health, 2005.*

Box 8.6: Medical Tourism — A great opportunity

You might have seen and heard on TV news or read in newspapers about foreigners flocking to India for surgeries, liver transplants, dental and even cosmetic care. Why? Because our health services combine latest medical technologies with qualified professionals and is cheaper for foreigners as compared to costs of similar health care services in their own countries. In the year 2004-05, as many as 1,50,000 foreigners visited India for medical treatment. And this figure is likely to increase by 15 per cent each year. Experts predict that by 2012 India could earn more than 100 billion rupees through such 'medical tourism'. **Health infrastructure** can be upgraded to attract more foreigners to India.

person occasionally employing a hired worker. Scholars point out that the private sector in India has grown independently without any major regulation; some private practitioners are not even registered doctors and are known as quacks.

Since the 1990s, owing to liberalisation measures, many non-resident Indians and industrial and pharmaceutical companies have set up state-of-the-art super-specialty hospitals to attract India's rich and medical tourists (see Box 8.6). But since the poor can depend only on government hospitals, the role of government in providing healthcare remains important.

Indian Systems of Medicine (ISM): It includes six systems: Ayurveda, Yoga, Unani, Siddha, Naturopathy and Homeopathy (AYUSH). At present there are 3,004 ISM hospitals, 23,028 dispensaries and as many as 6,11,431 registered practitioners in India. But little has been done to set up a

Box 8.7: Community and Non-Profit Organisations in Healthcare

One of the important aspects of a good healthcare system is community participation. It functions with the idea that the people can be trained and involved in primary healthcare system. This method is already being used in some parts of our country. SEWA in Ahmedabad and ACCORD in Nilgiris could be the examples of some such NGOs working in India. Trade unions have built alternative health care services for their members and also to give low-cost and rational care to people from nearby villages. The most well-known and pioneering initiative in this regard has been Shahid Hospital, built in 1983 and sustained by the workers of CMSS (Chhattisgarh Mines Shramik Sangh) in Durg, Madhya Pradesh. A few attempts have also been made by rural organisations to build alternative healthcare initiatives. One example is in Thane, Maharashtra, where in the context of a tribal people's organisation, *Kashtakari Sangathan*, trains women health workers at the village level to treat simple illnesses at minimal cost.

TABLE 8.4

Indicators of Health in India in Comparison with other Countries

Indicator	*India*	*China*	*USA*	*Sri Lanka*
Infant Mortality Rate/1,000 live births	68	30	2	8
Under-5 mortality /1,000 live-births	87	37	8	15
Birth by skilled attendants	43	97	99	97
Fully immunised	67	84	93	99
Health expenditure as % of GDP	4.8	5.8	14.6	3.7
Government share of total expenditure (%)	21.3	33.7	44.9	48.7
Government health spending to total government spending (%)	4.4	10	23.1	6
Per capita spending in international dollars	96	261	5274	131

Source: *World Health Report 2005*

framework to standardise education or to promote research. ISM has huge potential and can solve a large part of our health care problems because they are effective, safe and inexpensive.

Indicators of Health and Health Infrastructure—A Critical Appraisal: As pointed out earlier, the health status of a country can be assessed through indicators such as infant mortality and maternal mortality rates, life expectancy and nutrition levels, along with the incidence of communicable and non-communicable diseases. Some of the health indicators, and India's position, are given in Table 8.4. Scholars argue that there is greater scope for the role of government in the health sector. For instance, the table shows expenditure on health sector as five per cent of total GDP. This is abysmally low as compared to other countries, both developed and developing.

One study points out that India has about 17 per cent of the world's population but it bears a frightening 20 per cent of the global burden of diseases (GBD). GBD is an indicator used by experts to gauge the number of people dying prematurely due to a particular disease as well as the number of years spent by them in a state of 'disability' owing to the disease.

In India, more than half of GBD is accounted for by communicable diseases such as diarrhoea, malaria and tuberculosis. Every year around five lakh children die of water-borne diseases. The danger of AIDS is also looming large. Malnutrition and inadequate supply of vaccines lead to the death of 2.2 million children every year.

At present, less than 20 per cent of the population utilises public health facilities. One study has pointed out that only 38 per cent of the PHCs have the required number of doctors and

Work These Out

- Visit the primary hospitals located in your area or neighbourhood. Also collect the details of the number of private hospitals, medical laboratories, scan centres, medical shops and other such facilities in your locality.
- Debate in the class on the topic — 'Should we build an army of *tais* (mid-wives) to take care of the poor, who cannot afford the services of the thousands of medical graduates who pass out of our medical colleges every year?'
- A study estimates that medical costs alone push down 2.2 per cent of the population below the poverty line each year. How?
- Visit a few hospitals in your locality. Find out the number of children receiving immunisation from them. Ask the hospital staff about the number of children immunised 5 years ago. Discuss the details in class.
- Two students — Leena Talukdar (16) and Sushanta Mahanta (16) of Assam — have developed a herbal mosquito repellent 'jag' using a few locally available medicinal plants — paddy straw, husk and dried garbage. Their experiment has been successful (*Shodh Yatra* (innovation), *Yojana,* September 2005). If you know anyone whose innovative methods improve the health status of people or if you know someone who has a knowledge of medicinal plants and heals the ailments of people, speak to them and bring them to class or collect information about why and how they treat ailments. Share this with your class. You can also write to local newspapers or magazines.
- Do you think Indian cities could be provided with world-class health infrastructure so that they will become attractive for medical tourists? Or should the government concentrate on providing health infrastructure for people in rural areas? What should be the priority of the government? Debate.
- Find out NGOs working in your area in the field of healthcare. Collect information about their activities and discuss in the classroom.

only 30 per cent of the PHCs have sufficient stock of medicines.

Urban-Rural and Poor-Rich Divide: Though 70 per cent of India's population lives in rural areas, only one-fifth of its hospitals are located in rural areas. Rural India has only about half the number of dispensaries. Out of about 7 lakh beds, roughly 11 per cent are available in rural areas. Thus, people living in rural areas do not have sufficient medical infrastructure. This has led to differences in the health status of people. As far as hospitals are concerned, there are only 0.36 hospitals for every one lakh people in rural areas while urban areas have 3.6

Work These Out

- The overall health status of the country has certainly improved through the years. Life expectancy has gone up, infant mortality rate has come down. Small pox has been eradicated and the goal to eradicate leprosy and polio looks achievable. But these statistics seem good only when you look at them in isolation. Compare these with the rest of the world. What do you find?
- Observe your class for a month and find out why some students remain absent. If it is due to health problems then find out what kind of medical problem they had. Collect the details of the problem, the nature of treatment they took and the amount of money their parents spent on their treatment. Discuss the information in class.

hospitals for the same number of people. The PHCs located in rural areas do not offer even X-ray or blood testing facilities which, for a city dweller, constitutes basic healthcare. States like Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh are relatively lagging behind in health care facilities. In the rural areas, the percentage of people who have no access to proper care has risen from 15 in 1986 to 24 in 2003.

Villagers have no access to any specialised medical care like paediatrics, gynaecology, anaesthesia and obstetrics. Even though 165 recognised medical colleges produce 12,000 medical graduates every year, the shortage of doctors in rural areas persists. While one-fifth of these doctor graduates leave the country for better monetary prospects, many others opt for private hospitals which are mostly located in urban areas.

The poorest 20 per cent of Indians living in both urban and rural areas spend 12 per cent of their income on healthcare while the rich spend only 2 per cent. What happens when the poor fall sick? Many have to sell their land or even pledge their children to afford treatment. Since government-run hospitals do not provide sufficient

Fig.8.10 *Despite availing of various healthcare measures, maternal health is cause for concern*

facilities, the poor are driven to private hospitals which makes them indebted forever. Or else they opt to die.

Women's Health: Women constitute about half the total population in India. They suffer many disadvantages as compared to men in the areas of education, participation in economic activities and health care. The deterioration in the child sex ratio in the country from 945 in 1991 to 927, as revealed by the census of 2001, points to the growing incidence of female foeticide in the country. Close to 3,00,000 girls under the age of 15 are not only married but have already borne children at least once. More than 50 per cent of married women between the age group of 15 and 49 have anaemia and nutritional anaemia caused by iron deficiency, which has contributed to 19 per cent of maternal deaths. Abortions are also a major cause of maternal morbidity and mortality in India.

Health is a vital public good and a basic human right. All citizens can get better health facilities if public health services are decentralised. Success in the long-term battle against diseases depends on education and efficient health infrastructure. It is, therefore, critical to create awareness on health and hygiene and provide efficient systems. The role of telecom and IT sectors cannot be neglected in this process. The effectiveness of healthcare programmes also rests on primary healthcare. The ultimate goal should be to help people move towards a better quality of life. Private-public partnership can effectively ensure reliability, quality and affordability of both drugs and medicare. There is a sharp divide between the urban and rural healthcare in India. If we continue to ignore this deepening divide, we run the risk of destabilising the socio- economic fabric of our country. In order to provide basic healthcare to all, accessibility and affordability need to be integrated in our basic health infrastructure.

8.7 Conclusion

Infrastructure, both economic and social, is essential for the development of a country. As a support system, it directly influences all economic activities by increasing the productivity of the factors of production and improving the quality of life. In the last six decades of independence, India has made considerable progress in building infrastructure, nevertheless, its distribution is uneven. Many parts of rural India are yet to get good roads, telecommunication facilities, electricity, schools and hospitals. As India moves towards modernisation, the increase in demand for quality infrastrucutre, keeping in view their environmental impact, will have to be addressed. The reform policies by providing various concessions and incentives, aim at attracting the private sector in general and foreign investors in particular. While assessing the two infrastructure — energy and health — it is clear that there is scope for equal access to infrastructure for all.

Recap

- Infrastructure is a network of physical facilities and public services and with this social infrastructure is equally important to support it. It is an important base for economic development of the country.
- Infrastructure needs to be upgraded from time to time to maintain high economic growth rate. Better infrastructural facilities have attracted more foreign investments and tourists to India recently.
- It is important to develop rural infrastructural facilities.
- Public and private partnership is required to bring in huge funds for infrastructural development.
- Energy is very vital for rapid economic growth. There is a big gap between consumer demand and supply of electricity in India.
- Non-conventional sources of energy can be of great support to meet shortage of energy.
- The power sector is facing a number of problems at generation, transmission and distribution levels.
- Health is a yardstick of human well-being, physical as well as mental.
- There has been significant expansion in physical provision of health services and improvements in health indicators since independence.
- Public health system and facilities are not sufficient for the bulk of the population.
- There is a wide gap between rural-urban areas and between poor and rich in utilising health care facilities.
- Women's health across the country has become a matter of great concern with reports of increasing cases of female foeticide and mortality.
- Regulated private sector health services can improve the situation and, at the same time, NGOs and community participation are very important in providing health care facilities and spreading health awareness.
- Natural systems of medicine have to be explored and used to support public health. There is a great scope of advancement of medical tourism in India.

EXERCISES

1. Explain the term 'infrastructure'.
2. Explain the two categories into which infrastructure is divided. How are both interdependent?
3. How do infrastructure facilities boost production?
4. Infrastructure contributes to the economic development of a country. Do you agree? Explain.
5. What is the state of rural infrastructure in India?
6. What is the significance of 'energy'? Differentiate between commercial and non-commercial sources of energy.
7. What are the three basic sources of generating power?
8. What do you mean by transmission and distribution losses? How can they be reduced?
9. What are the various non-commercial sources of energy?
10. Justify that energy crisis can be overcome with the use of renewable sources of energy.
11. How has the consumption pattern of energy changed over the years?
12. How are the rates of consumption of energy and economic growth connected?
13. What problems are being faced by the power sector in India?
14. Discuss the reforms which have been initiated recently to meet the energy crisis in India.
15. What are the main characteristics of health of the people of our country?
16. What is a 'global burden of disease'?
17. Discuss the main drawbacks of our health care system.
18. How has women's health become a matter of great concern?
19. Describe the meaning of public health. Discuss the major public health measures undertaken by the state in recent years to control diseases.
20. List out the six systems of Indian medicine.
21. How can we increase the effectiveness of health care programmes?

SUGGESTED ADDITIONAL ACTIVITIES

1. Did you know that to bring a megawatt of electricity to your homes, 30-40 million rupees are spent? Building a new power plant would cost millions. Isn't this reason enough for you to begin conserving energy in your house? Electricity saved is money saved; in fact, it is worth much more than electricity generated. Every time your electricity bill reaches home, you realise there is no need for so many lights and fans around you. All you have to do is be slightly more alert and careful. And the best thing is, you can start right away. Involve the rest of your family in this effort and see the difference. Note down the monthly consumption of electricity in your house. See the difference in the bill amount after you apply energy saving tactics.
2. Find out what infrastructure projects are in progress in your area. Then, find out
   (i) The budget allotted for the project.
   (ii) The sources of its financing.
   (iii) How much employment will it generate?
   (iv) What will be the overall benefits after its completion?
   (v) How long will it take to be completed?
   (vi) Company/companies engaged in the project.
3. Visit any nearby thermal power station/hydro-power station/nuclear power plant. Observe how these plants work.
4. The class can be divided into groups to make a survey of energy use in their neighbourhood. The aim of the survey should be to find out which particular fuel is most used in the neighbourhood and the quantity in which it is used. Graphs can be made by the different groups and compared to find out possible reason for preference of one particular fuel.
5. Study the life and work of Dr Homi Bhaba, the architect of modern India's energy establishments.
6. Hold a classroom discussion or debate on — 'warring nations make for an unhealthy world, so do warped attitudes and closed minds make for mental ill-health'.

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9

ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

After studying this chapter, the learners will

- understand the concept of environment
- analyse the causes and effects of 'environmental degradation' and 'resource depletion'
- understand the nature of environmental challenges facing India
- relate environmental issues to the larger context of sustainable development.

> ***The environment, left to itself, can continue to support life for millions of years. The single most unstable and potentially disruptive element in the scheme is the human species. Human beings, with modern technology, have the capacity to bring about, intentionally or unintentionally, far-reaching and irreversible changes in the enviornment.***
>
> ***Anonymous***

9.1 Introduction

In the earlier chapters we have discussed the main economic issues faced by the Indian economy. The economic development that we have achieved so far has come at a very heavy price—at the cost of environmental quality. As we step into an era of globalisation that promises higher economic growth, we have to bear in mind the adverse consequences of the past development path on our environment and consciously choose a path of sustainable development. To understand the unsustainable path of development that we have taken and the challenges of sustainable development, we have to first understand the significance and contribution of environment to economic development. With this in mind, this chapter is divided into three sections. The first part deals with the functions and role of environment. The second section discusses the state of India's environment and the third section deals with steps and strategies to achieve sustainable development.

9.2 Environment — Definition and Functions

Environment is defined as the total planetary inheritance and the totality of all resources. It includes all the biotic and abiotic factors that influence each other. While all living elements—the birds, animals and plants, forests, fisheries etc.—are biotic elements, abiotic elements include air, water, land etc. Rocks and sunlight are all examples of abiotic elements of the environment. A study of the environment then calls for a study of the inter-relationship between these biotic and abiotic components of the environment.

Functions of the Environment: The environment performs four vital functions (i) it supplies resources: resources here include both renewable and non-renewable resources. Renewable resources are those which can be used without the possibility of the resource becoming depleted or exhausted. That is, a continuous supply of the resource remains available. Examples of renewable resources are the trees in the forests and the fishes in the ocean. Non-renewable resources, on the other hand, are those which get exhausted with extraction and use, for example, fossil fuel (ii) it assimilates waste (iii) it sustains life by providing genetic and bio diversity and (iv) it also provides aesthetic services like scenery etc.

The environment is able to perform these functions without any interruption as long as the demand on these

Fig. 9.1 *Water bodies: small, snow-fed Himalayan streams are the few fresh-water sources that remain unpolluted.*

functions is within its **carrying capacity**. This implies that the resource extraction is not above the rate of regeneration of the resource and the wastes generated are within the assimilating capacity of the environment. When this is not so, the environment fails to perform its third and vital function of life sustenance and this results in an environmental crisis. This is the situation today all over the world. The rising population of the developing countries and the affluent consumption and production standards of the developed world have placed a huge stress on the environment in terms of its first two functions. Many resources have become extinct and the wastes generated are beyond the absorptive capacity of the environment. **Absorptive capacity** means the ability of the environment to absorb degradation. The result — we are today at the threshold of environmental crisis. The past development has polluted and dried up rivers and other aquifers making water an economic good. Besides, the intensive and extensive extraction of both renewable and non-renewable resources has exhausted some of these

Work These Out

- Why has water become an economic commodity? Discuss.
- Fill in the following table with some common types of diseases and illnesses that are caused due to air, water and noise pollution.

Air Pollution	*Water Pollution*	*Noise Pollution*
Asthma	Cholera	

Box 9.1: Global Warming

Global warming is a gradual increase in the average temperature of the earth's lower atmosphere as a result of the increase in greenhouse gases since the **Industrial Revolution**. Much of the recent observed and projected global warming is human-induced. It is caused by man-made increases in carbon dioxide and other **greenhouse gases** through the burning of **fossil fuels** and **deforestation**. Adding carbon dioxide, methane and such other gases (that have the potential to absorb heat) to the atmosphere with no other changes will make our planet's surface warmer. The atmospheric concentrations of carbon dioxide and CH_4 have increased by 31 per cent and 149 per cent respectively above pre-industrial levels since 1750. During the past century, the atmospheric temperature has risen by 1.1 F (0.6 C) and sea level has risen several inches. Some of the longer-term results of global warming are melting of polar ice with a resulting rise in sea level and coastal flooding; disruption of drinking water supplies dependent on snow melts; extinction of species as ecological niches disappear; more frequent tropical storms; and an increased incidence of tropical diseases.

Among factors that may be contributing to global warming are the burning of coal and petroleum products (sources of carbon dioxide, methane, nitrous oxide, ozone); deforestation, which increases the amount of carbon dioxide in the atmosphere; methane gas released in animal waste; and increased cattle production, which contributes to deforestation, methane production, and use of fossil fuels. A UN Conference on Climate Change, held in Kyoto, Japan, in 1997, resulted in an international agreement to fight global warming which called for reductions in emissions of greenhouse gases by industrialised nations.

Source: *www.wikipedia.org*

vital resources and we are compelled to spend huge amounts on technology and research to explore new resources. Added to these are the health costs of degraded environmental quality — decline in air and water quality (seventy per cent of water in India is polluted) have resulted in increased incidence of respiratory and water-borne diseases. Hence the expenditure on health is also rising. To make matters worse, global environmental issues such as **global warming** and **ozone depletion** also contribute to increased financial commitments for the government. Thus, it is clear that the **opportunity costs** of negative environmental impacts are high.

The biggest question that arises is: are environmental problems new to this century? If so, why? The answer to this question requires some elaboration. In the early days when civilisation just began, or before this phenomenal increase in population, and before countries took to industrialisation, the demand for environmental resources and services was much less than their supply. This meant that pollution was within the absorptive capacity of the

Box 9.2: Ozone Depletion

Ozone depletion refers to the phenomenon of reductions in the amount of ozone in the **stratosphere**. The problem of ozone depletion is caused by high levels of chlorine and bromine compounds in the stratosphere. The origins of these compounds are chlorofluorocarbons (CFC), used as cooling substances in air-conditioners and refrigerators, or as aerosol propellants, and bromofluorocarbons (halons), used in fire extinguishers. As a result of depletion of the ozone layer, more ultraviolet (UV) radiation comes to Earth and causes damage to living organisms. UV radiation seems responsible for skin cancer in humans; it also lowers production of phytoplankton and thus affects other aquatic organisms. It can also influence the growth of terrestrial plants. A reduction of approximately 5 per cent in the ozone layer was detected from 1979 to 1990. Since the **ozone layer** prevents most harmful wavelengths of ultraviolet light from passing through the **Earth's atmosphere**, observed and projected decreases in ozone have generated worldwide concern. This led to the adoption of the **Montreal Protocol** banning the use of chlorofluorocarbon (CFC) compounds, as well as other ozone depleting chemicals such as carbon tetrachloride, trichloroethane (also known as methyl chloroform), and bromine compounds known as **halons.**

Source: *www.ceu.hu*

environment and the rate of resource extraction was less than the rate of regeneration of these resources. Hence environmental problems did not arise.

Fig. 9.2 *Damodar Valley is one of India's most industrialised regions. Pollutants from the heavy industries along the banks of the Damodar river are converting it into an ecological disaster*

But with population explosion and with the advent of industrial revolution to meet the growing needs of the expanding population, things changed. The result was that the demand for resources for both production and consumption went beyond the rate of regeneration of the resources; the pressure on the absorptive capacity of the environment increased tremendously — this trend continues even today. Thus what has happened is a reversal of supply-demand relationship for environmental quality — we are now faced with increased demand for environmental resources and services but their supply is limited due to overuse

and misuse. Hence the environmental issues of waste generation and pollution have become critical today.

Fig. 9.3 *Deforestation leads to land degradation, biodiversity loss and air pollution*

9.3 State of India's Environment

India has abundant natural resources in terms of rich quality of soil, hundreds of rivers and tributaries, lush green forests, plenty of mineral deposits beneath the land surface, vast stretch of the Indian Ocean, ranges of mountains, etc. The black soil of the Deccan Plateau is particularly suitable for cultivation of cotton, leading to concentration of textile industries in this region. The Indo-Gangetic plains — spread from the Arabian Sea to the Bay of Bengal — are one of the most fertile, intensively cultivated and densely populated regions in the world. India's forests, though unevenly distributed, provide green cover for a majority of its population and natural cover for its wildlife. Large deposits of iron-ore, coal and natural gas are found in the country. India alone accounts for nearly 20 per cent of the world's total iron-ore reserves. Bauxite, copper, chromate, diamonds, gold, lead, lignite, manganese, zinc, uranium, etc. are also available in different parts of the country. However, the developmental activities in India have resulted in pressure on its finite natural resources, besides creating impacts on human health and well-being. The threat to India's environment poses a dichotomy—threat of poverty-induced environmental degradation and, at the same time, threat of pollution from affluence and a rapidly growing industrial sector. Air pollution, water contamination, soil erosion, deforestation and wildlife extinction are some of the most pressing environmental concerns of India. The priority issues identified are (i) land degradation (ii) biodiversity loss (iii) air pollution with special reference to vehicular pollution in urban cities (iv) management of fresh water and (v) solid waste management. Land in India suffers from varying degrees and types of degradation stemming mainly from unstable use and inappropriate management practices.

Box. 9.3: Chipko or Appiko — What's in a Name?

You may be aware of the Chipko Movement, which aimed at protecting forests in the Himalayas. In Karnataka, a similar movement took a different name, 'Appiko', which means to hug. On 8 September 1983, when the felling of trees was started in Salkani forest in Sirsi district, 160 men, women and children hugged the trees and forced the woodcutters to leave. They kept vigil in the forest over the next six weeks. Only after the forest officials assured the volunteers that the trees will be cut scientifically and in accordance with the working plan of the district, did they leave the trees.

When commercial felling by contractors damaged a large number of natural forests, the idea of hugging the trees gave the people hope and confidence that they can protect the forests. On that particular incident, with the felling discontinued, the people saved 12,000 trees. Within months, this movement spread to many adjoining districts.

Indiscriminate felling of trees for fuelwood and for industrial use has led to many environmental problems. Twelve years after setting up of a paper mill in Uttar Kanara area, bamboo has been wiped out from that area. "Broad-leaved trees which protected the soil from the direct onslaught of rain have been removed, the soil washed away, and bare laterite soil left behind. Now nothing grows but a weed", says a farmer. Farmers also complain that rivers and rivulets dry up quicker, and that rainfall is becoming erratic. Diseases and insects earlier unknown are now attacking the crops.

Appiko volunteers want the contractors and forest officials to follow certain rules and restrictions. For instance, local people should be consulted when trees are marked for felling and trees within 100 metres of a water source and on a slope of 30 degrees or above should not be felled.

Do you know that the government allocates forestlands to industries to use forest materials as industrial raw material? Even if a paper mill employs 10,000 workers and a plywood factory employs 800 people but if they deprive the daily needs of a million people, is it acceptable? What do you think?

Source: *Excerpts from 'State of India's Environment 2: The Second Citizens' Report 1984-85', Centre for Science and Environment, 1996, New Delhi.*

Some of the factors responsible for land degradation are (i) loss of vegetation occuring due to deforestation (ii) unsustainable fuel wood and fodder extraction (iii) shifting cultivation (iv) encroachment into forest lands (v) forest fires and over grazing (vi) non-adoption of adequate soil conservation measures (vii) improper crop rotation (viii) indiscriminate use of agro-chemicals such as fertilisers and pesticides (ix) improper planning and management of irrigation systems (x) extraction of ground water in excess of the recharge capacity (xi) open access resource and (xii) poverty of the agriculture-dependent people.

India supports approximately 16 per cent of the world's human and 20 per cent of livestock population on a mere 2.5 per cent of the world's geographical area. The high density of population and livestock and the competing uses of land for forestry, agriculture, pastures, human settlements and industries exert an enormous pressure on the country's finite land resources.

The per capita forestland in the country is only 0.08 hectare against the requirement of 0.47 hectare to meet basic needs, resulting in an excess felling of about 15 million cubic metre forests over the permissible limit.

Estimates of soil erosion show that soil is being eroded at a rate of 5.3 billion tonnes a year for the entire country as a result of which the country loses 0.8 million tonnes of nitrogen, 1.8 million tonnes of phosphorus and 26.3 million tonnes of potassium every year. According to the Government of India, the quantity of nutrients lost due to erosion each year ranges from 5.8 to 8.4 million tonnes.

Work These Out

- In order to enable the students to appreciate the contribution of environment to economic development, the following game can be introduced. One student may name a product used by any enterprise and the other student may trace out its roots to nature and earth.

trucks ← steel and rubber
steel ← iron ← mineral ← earth
rubber ← trees ← forests ← earth
books ← paper ← trees ← fruit ← earth
cloth ← cotton ← plant ← nature
petrol ← earth
machinery ← Iron ← Mineral ← Earth

- A truck driver had to pay Rs 1,000 as challan as his truck was emitting black soot. Why do you think he was penalised? Was it justified? Discuss.

Box 9.4 : Pollution Control Boards

In order to address two major environmental concerns in India, viz., water and air pollution, the government set up the Central Pollution Control Board (CPCB) in 1974. This was followed by states establishing their own state level boards to address all the environmental concerns. They investigate, collect and disseminate information relating to water, air and land pollution, lay down standards for sewage/trade effluent and emissions. These boards provide technical assistance to governments in promoting cleanliness of streams and wells by prevention, control and abatement of water pollution, and improve the quality of air and to prevent, control or abate air pollution in the country.

These boards also carry out and sponsor investigation and research relating to problems of water and air pollution and for their prevention, control or abatement. They also organise, through mass media, a comprehensive mass awareness programme for the same. They also prepare manuals, codes and guidelines relating to treatment and disposal of sewage and trade effluents.

They assess the air quality through regulation of industries. In fact, state boards, through their district level officials, periodically inspect every industry under their jurisdiction to assess the adequacy of treatment measures provided to treat the effluent and gaseous emissions. It also provides background air quality data needed for industrial siting and town planning.

The pollution control boards collect, collate and disseminate technical and statistical data relating to water pollution. They monitor the quality of water in 125 rivers (including the tributaries), wells, lakes, creeks, ponds, tanks, drains and canals.

- Visit a nearby factory/irrigation department and collect the details of measures that they adopt to control water and air pollution.
- You might be seeing advertisements in newspapers, radio and television or billboards in your locality on awareness programmes relating to water and air pollution. Collect a few news-clippings, pamphlets and other information and discuss them in the classroom.

In India, air pollution is widespread in urban areas where vehicles are the major contributors and in a few other areas which have a high concentration of industries and thermal power plants. Vehicular emissions are of particular concern since these are ground level sources and, thus, have the maximum impact on the general population. The number of motor vehicles has increased from about 3 lakh in 1951 to 67 crores in 2003. In 2003, personal transport vehicles (two-wheeled vehicles and cars only) constituted about 80 per cent of the total number of registered vehicles thus contributing significantly to total air pollution load.

India is one of the ten most industrialised nations of the world. But this status has brought with it unwanted and unanticipated consequences such as unplanned urbanisation, pollution and the risk of accidents. The CPCB (Central Pollution

Control Board) has identified seventeen categories of industries (large and medium scale) as significantly polluting.

Work This Out

- You can see a column on the measure of air pollution in any national daily. Cut out the news item a week before Diwali, on the day of Diwali and two days after Diwali. Do you observe a significant difference in the value? Discuss in your class.

The above points highlight the challenges to India's environment. The various measures adopted by the Ministry of Environment and the central and state pollution control boards may not yield reward unless we consciously adopt a path of sustainable development. The concern for future generations alone can make development last forever. Development to enhance our current living styles, without concern for posterity, will deplete resources and degrade environment at a pace that is bound to result in both environmental and economic crisis.

9.4. Sustainable Development

Environment and economy are interdependent and need each other. Hence, development that ignores its repercussions on the environment will destroy the environment that sustains life forms. What is needed is sustainable development: development that will allow all future generations to have a potential average quality of life that is at least as high as that which is being enjoyed by the current generation. The concept of sustainable development was emphasised by the United Nations Conference on Environment and Development (UNCED), which defined it as: 'Development that meets the need of the present generation without compromising the ability of the future generation to meet their own needs'.

Read the definition again. You will notice that the term 'need' and the phrase 'future generations' in the definition are the catch phrases. The use of the concept 'needs' in the definition is linked to distribution of resources. The seminal report — Our Common Future — that gave the above definition explained sustainable development as 'meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life'. Meeting the needs of all requires redistributing resources and is hence a moral issue. Edward Barbier defined sustainable development as one which is directly concerned with increasing the material standard of living of the poor at the grass root level — this can be quantitatively measured in terms of increased income, real income, educational services, health care, sanitation, water supply etc. In more specific terms, sustainable development aims at decreasing the absolute poverty of the poor by providing lasting and secure livelihoods that minimise resource depletion, environmental

degradation, cultural disruption and social instability. Sustainable development is, in this sense, a development that meets the basic needs of all, particularly the poor majority, for employment, food, energy, water, housing, and ensures growth of agriculture, manufacturing, power and services to meet these needs.

The **Brundtland Commission** emphasises on protecting the future generation. This is in line with the argument of the environmentalists who emphasise that we have a moral obligation to hand over the planet earth in good order to the future generation; that is, the present generation should bequeath a better environment to the future generation. At least we should leave to the next generation a stock of 'quality of life' assets no less than what we have inherited.

The present generation should promote development that enhances the natural and built environment in ways that are compatible with (i) conservation of natural assets (ii) preservation of the regenerative capacity of the world's natural ecological system (iii) avoiding the imposition of added costs or risks on future generations.

According to Herman Daly, a leading environmental economist, to achieve sustainable development, the following needs to be done (i) limiting the human population to a level within the carrying capacity of the environment. The carrying capacity of the environment is like a ' plimsoll line' of the ship which is its load limit mark. In the absence of the plimsoll line for the economy, human scale grows beyond the carrying capacity of the earth and deviates from sustainable development (ii) technological progress should be input efficient and not input consuming (iii) renewable resources should be extracted on a sustainable basis, that is, rate of extraction should not exceed rate of regeneration (iv) for non-renewable resources rate of depletion should not exceed the rate of creation of renewable substitutes and (v) inefficiencies arising from pollution should be corrected.

9.5 Strategies for Sustainable Development

Use of Non-conventional Sources of Energy: India, as you know, is hugely dependent on thermal and hydro power plants to meet its power needs. Both of these have adverse environmental impacts. Thermal power plants emit large quantities of carbon dioxide which is a green house gas. It also produces fly ash which, if not used properly, can cause pollution of water bodies, land and other components of the environment. Hydroelectric projects inundate forests and interfere with the natural flow of water in catchment areas and the river basins. Wind power and solar rays are good examples of conventional but cleaner and greener technologies which can be effectively used to replace thermal and hydro-power.

LPG, Gobar Gas in Rural Areas: Households in rural areas generally use wood, dung cake or other biomass as

fuel. This practice has several adverse implications like deforestation, reduction in green cover, wastage of cattle dung and air pollution. To rectify the situation, subsidised LPG is being provided. In addition, gobar gas plants are being provided through easy loans and subsidy. As far as liquefied petroleum gas (LPG) is concerned, it is a clean fuel — it reduces household pollution to a large extent. Also, energy wastage is minimised. For the gobar gas plant to function, cattle dung is fed to the plant and gas is produced which is used as fuel while the slurry which is left over is a very good organic fertiliser and soil conditioner.

CNG in Urban Areas: In Delhi, the use of Compressed Natural Gas (CNG) as fuel in public transport system has significantly lowered air pollution and the air has become cleaner in the last few years.

Work This Out

- In Delhi buses and other public transport vehicles use CNG as fuel instead of petrol or diesel; some vehicles use convertible engines; solar energy is being used to light up the streets. What do you think about these changes? Organise a debate in class on the need for sustainable development in India.

Wind Power: In areas where speed of wind is usually high, wind mills can provide electricity without any adverse impact on the environment. Wind turbines move with the wind and electricity is generated. No doubt, the initial cost is high. But the benefits are such that the high cost gets easily absorbed.

Fig.9.4 *Gobar Gas Plant uses cattle dung to produce energy*

Solar Power through Photovoltaic Cells: India is naturally endowed with a large quantity of solar energy in the form of sunlight. We use it in different ways. For example, we dry our clothes, grains, other agricultural products as well as various items made for daily use. We also use sunlight to warm ourselves in winter. Plants use solar energy to perform photosynthesis. Now, with the help of photovoltaic cells, solar energy can be converted into electricity. These cells use special kind of materials to capture solar energy and then convert the energy into electricity. This technology is extremely useful for remote areas and for places where supply of power through grid or power lines is either not possible or proves very costly. This technique is also totally free from pollution.

Mini-hydel Plants: In mountainous regions, streams can be found almost everywhere. A large percentage of such streams are perennial. Mini-hydel plants use the energy of such streams to move small turbines. The turbines generate electricity which can be used locally. Such power plants are more or less environment-friendly as they do not change the land use pattern in areas where they are located; they generate enough power to meet local demands. This means that they can also do away with the need for large scale transmission towers and cables and avoid transmission loss.

Traditional Knowledge and Practices: Traditionally, Indian people have been close to their environment. They have been more a component of the environment and not its controller. If we look back at our agriculture system, healthcare system, housing, transport etc., we find that all practices have been environment friendly. Only recently have we drifted away from the traditional systems and caused large scale damage to the environment and also our rural heritage. Now, it is time to go back. One apt example is in healthcare. India is very much privileged to have about 15,000 species of plants which have medicinal properties. About 8,000 of these are in regular use in various systems of treatment including the folk tradition. With the sudden onslaught of the western system of treatment, we were ignoring our traditional systems such as Ayurveda, Unani, Tibetan and folk systems. These healthcare systems are in great demand again for treating chromic health problems. Now a days every cosmetic produce — hair oil, toothpaste, body lotion, face cream and what not — is herbal in composition. Not only are these products environment friendly, they are relatively free from side effects and do not involve large-scale industrial and chemical processing.

Biocomposting: In our quest to increase agricultural production during the last five decades or so, we almost totally neglected the use of compost and completely switched over to chemical fertilisers. The result is that large tracts of productive land have been adversely affected, water bodies including ground water system have suffered due to chemical contamination

and demand for irrigation has been going up year after year.

Farmers, in large numbers all over the country, have again started using compost made from organic wastes of different types. In certain parts of the country, cattle are maintained only because they produce dung which is an important fertiliser and soil conditioner.

Earthworms can convert organic matter into compost faster than the normal composting process. This process is now being widely used. Indirectly, the civic authorities are benefited too as they have to dispose reduced quantity of waste.

Biopest Control: With the advent of green revolution, the entire country entered into a frenzy to use more and more chemical pesticides for higher yield. Soon, the adverse impacts began to show; food products were contaminated, soil, water bodies and even ground water were polluted with pesticides. Even milk, meat and fishes were found to be contaminated.

To meet this challenge, efforts are on to bring in better methods of pest control. One such step is the use of pesticides based on plant products. Neem trees are proving to be quite useful. Several types of pest controlling chemicals have been isolated from neem and these are being used. Mixed cropping and growing different crops in consecutive years on the same land have also helped farmers.

In addition, awareness is spreading about various animals and birds which help in controlling pests. For example, snakes are one of the prime group of animals which prey upon rats, mice and various other pests. Similarly, large varieties of birds, for example, owls and peacocks, prey upon vermin and pests. If these are allowed to dwell around the agricultural areas, they can clear large varieties of pests including insects. Lizards are also important in this regard. We need to know their value and save them.

Sustainable development has become a catch phrase today. It is 'indeed' a paradigm shift in development thinking. Though it has been interpreted in a number of ways, adherence to this path ensures lasting development and non-declining welfare for all.

9.6 Conclusion

Economic development, which aimed at increasing the production of goods and services to meet the needs of a rising population, puts greater pressure on the environment. In the initial stages of development, the demand for environmental resources was less than that of supply. Now the world is faced with increased demand for environmental resources but their supply is limited due to overuse and misuse. Sustainable development aims at promoting the kind of development that minimises environmental problems and meets the needs of the present generation without compromising the ability of the future generation to meet their own needs.

Recap

- Environment performs four functions: supplies resources, assimilates wastes, sustains life by providing genetic and bio diversity and provides aesthetic services.
- Population explosion, affluent consumption and production have placed a huge stress on the environment.
- Developmental activities in India have put immense pressure on its finite natural resources, besides creating impact on human health and well-being.
- The threat to India's environment is of two dimensions—threat of poverty induced environmental degradation and the threat of pollution from affluence and a rapidly growing industrial sector.
- Though the government, through various measures, attempts to safeguard the environment, it is also necessary to adopt a path of sustainable development.
- Sustainable development is development that meets the need of the present generation without compromising the ability of the future generation to meet their own needs.
- Promotion of natural resources, conservation, preserving regenerative capacity of ecological system and avoiding the imposition of environmental risks on future generations would lead to sustainable development.

EXERCISES

1. What is meant by environment?
2. What happens when the rate of resource extraction exceeds that of their regeneration?
3. Classify the following into renewable and non-renewable resources (i) trees (ii) fish (iii) petroleum (iv) coal (v) iron-ore (vi) water.
4. Two major environmental issues facing the world today are _____ and _____.
5. How do the following factors contribute to the environmental crisis in India? What problem do they pose for the government?
   (i) Rising population
   (ii) Air pollution

(iii) Water contamination
(iv) Affluent consumption standards
(v) Illiteracy
(vi) Industrialisation
(vii) Urbanisation
(viii) Reduction of forest coverage
(ix) Poaching
(x) Global warming.

6. What are the functions of the environment?
7. Identify six factors contributing to land degradation in India.
8. Explain how the opportunity costs of negative environmental impact are high.
9. Outline the steps involved in attaining sustainable development in India.
10. India has abundant natural resources—substantiate the statement.
11. Is environmental crisis a recent phenomenon? If so, why?
12. Give two instances of
    (a) Overuse of environmental resources
    (b) Misuse of environmental resources.
13. State any four pressing environmental concerns of India. Correction for environmental damages involves opportunity costs—explain.
14. Explain the supply-demand reversal of environmental resources.
15. Account for the current environmental crisis.
16. Highlight any two serious adverse environmental consequences of development in India. India's environmental problems pose a dichotomy — they are poverty induced and, at the same time, due to affluence in living standards—is this true?
17. What is sustainable development?
18. Keeping in view your locality, describe any four strategies of sustainable development.
19. Explain the relevance of intergenerational equity in the definition of sustainable development.

SUGGESTED ADDITIONAL ACTIVITIES

1. Suppose 70 lakh cars are added every year to the roads of metropolitans. Which type of resources do you think are undergoing depletion? Discuss.
2. Make a list of items that can be recycled.

3. Prepare a chart on the causes and remedies of soil erosion in India.
4. How does population explosion contribute to the environmental crisis? Debate in the classroom.
5. The nation has to pay heavily for correcting environmental damages—discuss.
6. A paper factory is to be set up in your village. Arrange a role play consisting of an activist, an industrialist and a group of villagers.

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UNIT IV

Development Experiences of India: A Comparison with Neighbours

In today's globalised world, where geographical boundaries are slowly becoming meaningless, it is important for neighbouring countries in the developing world to understand the development strategies being pursued by their neighbours. This is more so because they share the relatively limited economic space in world markets. In this unit, we will compare India's developmental experiences with two of its important and strategic neighbours — Pakistan and China.

10

Comparative Development Experiences of India and its Neighbours

After studying this chapter, the learners will

- figure out comparative trends in various economic and human development indicators of India and its neighbours, China and Pakistan
- assess the strategies that these countries have adopted to reach their present state of development.

> ***Geography has made us neighbours. History has made us friends. Economics has made us partners, and necessity has made us allies. Those whom God has so joined together, let no man put asunder.***
>
> ***John F. Kennedy***

10.1 Introduction

In the preceding units we studied the developmental experience of India in detail. We also studied the kind of policies India adopted, which had varying impacts in different sectors. Over the last two decades or so, the economic transformation that is taking place in different countries across the world, partly because of the process of globalisation, has both short as well as long-term implications for each country, including India. In the post-Cold War world, nations have been primarily trying to adopt various means which will strengthen their own domestic economies. To this effect, they are forming regional and global economic groupings such as the **SAARC**, **European Union**, **ASEAN**, **G-8**, **G-20** etc. In addition, there is also an increasing eagerness on the parts of various nations to try and understand the developmental processes pursued by their neighbouring nations as it allows them to better comprehend their own strengths and weaknesses vis-à-vis their neighbours. In the unfolding process of globalisation, this is particularly considered essential by developing countries as they face competition not only from developed nations but also amongst themselves in the relatively limited economic space enjoyed by the developing world. Besides, an understanding of the other economies in our neighbourhood is also required as all major common economic activities in the region impinge on overall human development in a shared environment.

In this chapter we will compare the developmental strategies pursued by India and the largest two of its neighbouring economies—Pakistan and China. It has to be remembered, however, that apart from the similarities in their physical endowments, there is little in common between the political power setup of India, the largest democracy of the world which is wedded to a secular and deeply liberal Constitution for over half a century, and the authoritarian militarist political power structure of Pakistan or the command economy of China that has only recently started moving towards a more liberal restructuring.

10.2 Developmental Path—A Snapshot View

Do you know that India, Pakistan and China have many similarities in their developmental strategies? All the three nations have started towards their developmental path at the same time. While India and Pakistan became independent nations in 1947, People's Republic of China was established in 1949. In a speech at that time,

Jawaharlal Nehru had said, "these new and revolutionary changes in China and India, even though they differ in content, symbolise the new spirit of Asia and new vitality which is finding expression in the countries in Asia."

All the three countries had started planning their development strategies in similar ways. While India announced its first Five Year Plan for 1951-56, Pakistan announced its first five year plan, called, the Medium Term Plan, in 1956. China announced its First Five Year Plan in 1953. Till 1998, Pakistan had eight five year plans whereas China's tenth five year period is 2001-06. The current planning in India is based on Tenth Five Year Plan (2002-07). India and Pakistan adopted similar strategies such as creating a large public sector and raising public expenditure on social development. Till the 1980s, all the three countries had similar growth rates and per capita incomes. Where do they stand today in comparison to one another? Before we answer this question let us trace the historical path of developmental policies in China and Pakistan. After studying the last three units, we already know what policies India has been adopting since its independence.

China: After the establishment of People's Republic of China under one-party rule, all the critical sectors of the economy, enterprises and lands owned and operated by individuals were brought under government control. The **Great Leap Forward (GLF)** campaign initiated in 1958 aimed at industrialising the country on a massive scale. People were encouraged to set up industries in their backyards. In rural areas, communes were started. Under the **Commune** system, people collectively cultivated lands. In 1958, there were 26,000 communes covering almost all the farm population.

GLF campaign met with many problems. A severe drought caused havoc in China killing about 30 million people. When Russia had conflicts with China, it withdrew its professionals who had earlier been sent to China to help in the industrialisation process. In 1965, Mao introduced the **Great Proletarian Cultural Revolution** (1966-76) under which students and professionals were sent to work and learn from the countryside.

The present-day fast industrial growth in China can be traced back to the reforms introduced in 1978. China introduced reforms in phases. In the initial phase, reforms were initiated in agriculture, foreign trade and investment sectors. In agriculture, for instance, commune lands were divided into small plots which were allocated (for use not ownership) to individual households. They were allowed to keep all income from the land after paying stipulated taxes. In the later phase, reforms were initiated in the industrial sector. Private sector firms, in general, and township and village enterprises, i.e. those enterprises which were owned and operated by local collectives, in particular, were allowed to produce

Fig. 10.1 *Wagah Border is not only a tourist place but also used for trade between India and Pakistan*

goods. At this stage, enterprises owned by government (known as State Owned Enterprises—SOEs), which we, in India, call public sector enterprises, were made to face competition. The reform process also involved dual pricing. This means fixing the prices in two ways; farmers and industrial units were required to buy and sell fixed quantities of inputs and outputs on the basis of prices fixed by the government and the rest were purchased and sold at market prices. Over the years, as production increased, the proportion of goods or inputs transacted in the market was also increased. In order to attract foreign investors, **special economic zones** were set up.

Pakistan: While looking at various economic policies that Pakistan adopted, you will notice many similarities with India. Pakistan also follows the mixed economy model with co-existence of public and private sectors. In the late 1950s and 1960s, Pakistan introduced a variety of regulated policy framework (for import substitution industrialisation). The policy combined tariff protection for manufacturing of consumer goods together with direct import controls on competing imports. The introduction of Green Revolution led to mechanisation and increase in public investment in infrastructure in select areas, which finally led to a rise in the production of foodgrains. This changed the agrarian structure dramatically. In the 1970s, nationalisation of capital goods industries took place. Pakistan then shifted its policy orientation in the late 1970s and 1980s when the major thrust areas were denationalisation and encouragement to private sector. During this period, Pakistan also received financial support from western nations and remittances from

continuously increasing outflow of emigrants to the Middle-east. This helped the country in stimulating economic growth. The then government also offered incentives to the private sector. All this created a conducive climate for new investments. In 1988, reforms were initiated in the country.

Having studied a brief outline of the developmental strategies of China and Pakistan, let us now compare some of the developmental indicators of India, China and Pakistan.

10.3 Demographic Indicators

If we look at the global population, out of every six persons living in this world, one is an Indian and another Chinese. We shall compare some demographic indicators of India, China and Pakistan. The population of Pakistan is very small and accounts for roughly about one-tenth of China or India.

Though China is the largest nation among the three, its density is the lowest though geographically it occupies the largest area. Table 10.1 also shows the population growth as being highest in Pakistan, followed by India and China. Scholars point out the one-child norm introduced in China in the late 1970s as the major reason for low population growth. They also state that this measure led to a decline in the sex ratio, the proportion of females per 1000 males. However, from the table, you will notice that the sex ratio is low and biased against females in all the three countries. Scholars cite son-preference prevailing in all these countries as the reason. In recent times, all the three countries are adopting various measures to improve the situation. One-child norm and the resultant arrest in the growth of population also have other implications. For instance, after a few decades, in China, there will be more elderly people in proportion proportion to young people. This will force China to take steps to provide social security measures with fewer workers.

The fertility rate is also low in China and very high in Pakistan. Urbanisation is high in both Pakistan and China with India having 28 per cent of its people living in urban areas.

TABLE 10.1

Select Demographic Indicators, 2000-01

Country	*Estimated Population (in millions)*	*Annual Growth of Population (1990-2003)*	*Density (per sq. km)*	*Sex Ratio*	*Fertility Rate*	*Urbanisation*
India	1103.6	1.7	358	933	3.0	27.8
China	1303.7	1.0	138	937(*)	1.8	36.1
Pakistan	162.4	2.5	193	922	5.1	33.4

Note: *(*) data exclude population of Hong Kong, Macao and Taiwan Provinces.*

10.4 Gross Domestic Product and Sectors

One of the much-talked issues around the world about China is its growth of Gross Domestic Product. China has the second largest GDP (PPP) of $7.2 trillion whereas India's GDP (PPP) is $3.3 trillion and Pakistan's GDP is roughly about 10 per cent of India's GDP.

When many developed countries were finding it difficult to maintain a growth rate of even 5 per cent, China was able to maintain near double-digit growth for more than two decades as can be seen from Table 10.2. Also notice that in the 1980s Pakistan was ahead of India; China was having double-digit growth and India was at the bottom. In the 1990s, there is a marginal

Fig. 10.2 *Land use and agriculture in India, China and Pakistan*

TABLE 10.2

Growth of Gross Domestic Product (%), 1980–2003

Country	*1980–90*	*1990–2002/3*
India	5.7	5.8
China	10.3	9.7
Pakistan	6.3	3.6

Work These Out

- Does India follow any population stabilisation measures? If so, collect the details and discuss in the classroom. You may refer to the latest Economic Survery, annual reports or websites of Ministry of Health and Family Welfare (http://mohfw.nic.in).
- Scholars find son-preference as a common phenomenon in many developing countries including India, China and Pakistan. Do you find this phenomenon in your family or neighbourhood? Why do people practice discrimination between male and female children? What do you think about it? Discuss in the classroom.

Fig. 10.3 *Industry in India, China and Pakistan.*

decline in India and China's growth rates whereas Pakistan met with drastic decline at 3.6 per cent. Some scholars hold the reform processes introduced in 1988 in Pakistan and political instability as the reason behind this trend. We will study in a later section which sector contributed to this trend in these countries.

First, look at how people engaged in different sectors contribute to Gross Domestic Product. It was pointed out in the previous section that China and Pakistan have more proportion of urban people than India. In China, due to topographic and climatic conditions, the area suitable for cultivation is relatively small — only about 10 per cent of its total land area. The total cultivable area in China accounts for 40 per cent of the cultivable area in India. Until the 1980s, more than 80 per cent of the people in China were dependent on farming as their sole source of livelihood. Since then, the government encouraged people to leave their fields and pursue other activities such as handicrafts, commerce and transport. In 2000, with 54 per cent of its workforce engaged in agriculture, its contribution to GDP in China is 15 per cent (see Table 10.3).

In both India and Pakistan, the contribution of agriculture to GDP is the same, at 23 per cent, but the proportion of workforce that works in this sector is more in India. In Pakistan, about 49 per cent of people work in agriculture whereas in India it is 60 per cent. The sectoral share of output and employment also shows that in all the three economies, the industry and service sectors have less proportion of workforce but contribute more in terms of output. In China,

TABLE 10.3

Sectoral Share of Employment and GDP (%)

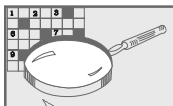
Sector	*Contribution to GDP (2003)*			*Distribution of Workforce*		
	India	*China*	*Pakistan*	*India (2000)*	*China (1997)*	*Pakistan (2000)*
Agriculture	23	15	23	60	54	49
Industry	26	53	23	16	27	18
Service	51	32	54	24	19	37
Total	**100**	**100**	**100**	**100**	**100**	**100**

manufacturing contributes the highest to GDP at 53 per cent whereas in India and Pakistan, it is the service sector which contributes the highest. In both these countries, service sector accounts for more than 50 per cent of GDP.

In the normal course of development, countries first shift their employment and output from agriculture to manufacturing and then to services. This is what is happening in China as can be seen from Table 10.4. The proportion of workforce engaged in manufacturing in India and Pakistan were low at 16 and 18 per cent respectively. The contribution of industries to GDP is also just equal to or marginally higher than the output from agriculture. In India and Pakistan, the shift is taking place directly to the service sector.

Thus, in both India and Pakistan, the service sector is emerging as a major player of development. It contributes more to GDP and, at the same time, emerges as a prospective employer. If we look at the proportion of workforce in the1980s, Pakistan was faster in shifting its workforce to service sector than India and China. In the 1980s, India, China and Pakistan employed 17, 12 and 27 per cent of its workforce in the service sector respectively. In 2000, it has reached the level of 24, 19 and 37 per cent respectively.

In the last two decades, the growth of agriculture sector, which employs the largest proportion of workforce in all the three countries, has declined. In the industrial sector, China has maintained a double-digit growth rate



Work These Out

- Do you think it is necessary for India and Pakistan to concentrate on the manufacturing sector as China does? Why?
- Scholars argue that the service sector should not be considered as an engine of growth whereas India and Pakistan have raised their share of output mainly in this sector only. What do you think?

TABLE 10.4

Trends in Output Growth in Different Sectors, 1980–2003

Country	*1980–90*			*1990–2002/03*		
	Agriculture	*Industry*	*Service*	*Agriculture*	*Industry*	*Service*
India	3.1	7.4	6.9	2.7	6.6	7.9
China	5.9	10.8	13.5	3.9	11.8	8.8
Pakistan	4	7.7	6.8	3.7	3.9	4.3

whereas for India and Pakistan growth rate has declined. In the case of service sector, India has been able to raise its rate of growth in the 1990s while China and Pakistan reduced their service sector growth. Thus, China's growth is mainly contributed by the manufacturing sector and India's growth by service sector. During this period, Pakistan has shown deceleration in all the three sectors.

10.5 Indicators of Human Development

You might have studied about the importance of human development indicators in the lower classes and the position of many developed and developing countries. Let us look how India, China and Pakistan have performed in some of the select indicators of human development. Look at Table 10.5.

TABLE 10.5

Some Select Indicators of Human Development, 2003

Items	*India*	*China*	*Pakistan*
Human Development Index (Value)	0.602	0.755	0.527
Rank	127	85	135
Life expectancy at birth (Years)	63.3	71.6	63.0
Adult literacy rate (% aged 15 and above)	61.0	90.9	48.7
GDP per capita (PPP US$)	2,892	5,003	2,097
People below poverty line	34.7	16.6	13.4
Infant Mortality Rate	63	30	81
Maternal Mortality Rate	540	56	500
Population with sustainable access to improved sanitation (%)	30	44	54
Population with sustainable access to an improved water source (%)	86	77	90
Population undernourished (% of total)	21	11	20

Source: *Human Development Report 2005*

If we compare the indices given in the Table, you will find that China is moving ahead of India and Pakistan. This is true for many indicators — income indicator such as GDP per capita, or proportion of population below poverty line or health indicators such as mortality rates, access to sanitation, literacy, life expectancy or malnourishment. Pakistan is ahead of India in reducing proportion of people below the poverty line and also its performance in education, sanitation and access to water is better than India. But neither of these two countries have been able to save women from maternal mortality. In China, for one lakh births, only 50 women die whereas in India and Pakistan, more than 500 women die. Surprisingly India and Pakistan are ahead of China in providing improved water sources. You will notice that for the proportion of people below the international poverty rate of $1 a day, both China and Pakistan are in similar positions whereas the proportion is almost two times higher for India. Find out for yourself how these differences occur.

In dealing with or making judgements on such questions, however, we should also note a problem with using the human development indicators given above with conviction. This occurs because these are all extremely important indicators; but these are not sufficient. Along with these, we also need what may be called 'liberty indicators'. One such indicator has actually been added as a measure of 'the extent of democratic participation in social and political decision-making' but it has not been given any extra weight. Some obvious 'liberty indicators' like measures of 'the extent of Constitutional protection given to rights of citizens' or 'the extent of constitutional protection of the Independence of the Judiciary and the Rule of Law' have not even been introduced so far. Without including these (and perhaps some more) and giving them overriding importance in the list, the construction of a human development index may be said to be incomplete and its usefulness limited.

10.6 Development Strategies — an Appraisal

It is common to find developmental strategies of a country as a model to others for lessons and guidance for their own development. It is particularly evident after the introduction of the reform process in different parts of the world. In order to learn from economic performance of our neighbouring countries, it is necessary to have an understanding of the roots of their successes and failures. It is also necessary to distinguish between, and contrast, the different phases of their strategies. Though different countries go through their development phases differently, let us take the initiation of reforms as a point of reference. We know that reforms were initiated in China in 1978, Pakistan in 1988 and India in 1991. Let us briefly assess their

achievements and failures in pre and post reform periods.

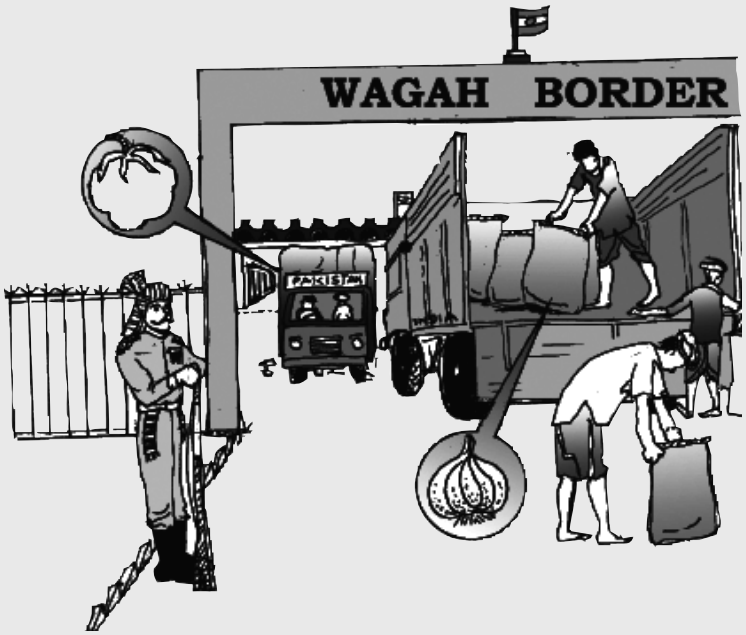
Why did China introduce structural reforms in 1978? China did not have any compulsion to introduce reforms as dictated by the World Bank and International Monetary Fund to India and Pakistan. The new leadership at that time in China was not happy with the slow pace of growth and lack of modernisation in the Chinese economy under the Maoist rule. They felt that Maoist vision of economic development based on decentralisation, self sufficiency and shunning of foreign technology, goods and capital had failed. Despite extensive land reforms, collectivisation, the Great Leap Forward and other initiatives, the per capita grain output in 1978 was the same as it was in the mid-1950s.

It was found that establishment of infrastructure in the areas of education and health, land reforms, long existence of decentralised planning and existence of small enterprises had helped positively in improving the social and income indicators in the post reform period. Before the introduction of reforms, there had already been massive extension of basic health services in rural areas. Through the commune system, there was more equitable distribution of food grains. Experts also point out that each reform measure was first implemented at a smaller level and then extended on a massive scale. The experimentation under decentralised government enabled to assess the economic, social and political costs of success or failure. For instance, when reforms were made in agriculture, as pointed out earlier by handing over plots of land to individuals for cultivation, it brought prosperity to a vast number of poor people. It created conditions for the subsequent phenomenal growth in rural industries and built up a strong support base for more reforms. Scholars quote many such examples on how reform measures led to rapid growth in China.

Scholars argue that in Pakistan the reform process led to worsening of all the economic indicators. We have seen in an earlier section that compared to 1980s, the growth rate of GDP and its sectoral constituents have fallen in the 1990s.

Though the data on international poverty line for Pakistan is quite healthy, scholars using the official data of Pakistan indicate rising poverty there. The proportion of poor in 1960s was more than 40 per cent which declined to 25 per cent in 1980s and started rising again in 1990s. The reasons for the slow-down of growth and re-emergence of poverty in Pakistan's economy, as scholars put it, are (i) agricultural growth and food supply situation were based not on an institutionalised process of technical change but on good harvest. When there was a good harvest, the economy was in good condition, when it was not, the economic indicators showed stagnation or negative trends (ii) you will recall that India had to borrow from the IMF and World Bank to set right its balance of payments

Work This Out



- There is a general perception going around in India that there is sudden increase in dumping of Chinese goods into India which will have implications for manufacturing sector in India and also that we do not engage ourselves in trading with our neighbouring nations. Look at the following table, which shows exports from India to, and imports from, Pakistan and China. Interpret the results and discuss in the classroom. From newspapers and websites and listening to news, collect the details of goods and services transacted in trading with our neighbours. In order to get detailed information relating to international trade, you can log on to the website: http:// dgft.delhi.nic.in.

Country	*Exports (Rs. in crores)*			*Imports (Rs. in crores)*		
	2003-2004	*2004-2005*	*Rate of Growth (%)*	*2003-2004*	*2004-2005*	*Rate of Growth (%)*
Pakistan	1320	2270	72	265	430	60
China	13600	20600	52	18600	30300	60

crisis; foreign exchange is an essential component for any country and it is important to know how it can be earned. If a country is able to build up its foreign exchange earnings by sustainable export of manufactured goods, it need not worry. In Pakistan most foreign exchange earnings came from remittances from Pakistani workers in the Middle-east and the exports of highly volatile agricultural products; there was also growing dependence on foreign loans on the one hand and increasing difficulty in paying back the loans on the other.

However, as stated in the 'One Year Performance of the (Pakistan) Government' for the year August 2004-2005, the Pakistan economy has been witnessing GDP growth at about 8 per cent for three consecutive years (2002-2005). All the three sectors, agriculture, manufacturing and service, have contributed to this trend. Besides facing high rates of inflation and rapid privatisation, the government is increasing the expenditure on various areas that can reduce poverty.

10.7 Conclusion

What are we learning from the developmental experiences of our neighbours? India, China and Pakistan have travelled more than five decades of developmental path with varied results. Till the late 1970s, all of them were maintaining the same level of low development. The last three decades have taken these countries to different levels. India, with democratic institutions, performed moderately, but a majority of its people still depend on agriculture. Infrastructure is lacking in many parts of the country. It is yet to raise the level of living of more than one-fourth of its population that lives below the poverty line. Scholars are of the opinion that political instability, over-dependence on remittances and foreign aid along with volatile performance of agriculture sector are the reasons for the slowdown of the Pakistan economy. Yet, in the recent past, it is hoping to improve the situation by maintaining high rates of GDP growth. It is also a great challenge for Pakistan to recover from the devastating earthquake in 2005, which took the lives of nearly 75,000 people and also resulted in enormous loss to property. In China, the lack of political freedom and its implications for human rights are major concerns; yet, in the last three decades, it used the 'market system without losing political commitment' and succeeded in raising the level of growth alongwith alleviation of poverty. You will also notice that unlike India and Pakistan, which are attempting to privatise their public sector enterprises, China has used the market mechanism to 'create additional social and economic opportunities'. By retaining collective ownership of land and allowing individuals to cultivate lands, China has ensured social security in rural areas. Public intervention in providing social infrastructure even prior to reforms has brought about positive results in human development indicators in China.

Recap

- With the unfolding of the globalisation process, developing countries are keen to understand the developmental processes pursued by their neighbours as they face competition from developed nations as also amongst themselves.
- India, Pakistan and China have similar physical endowments but totally different political systems.
- All the three countries follow the five-year plan pattern of development. However, the structures established to implement developmental policies are quite different.
- Till the early 1980s, the developmental indicators of all the three countries, such as growth rates and sectoral contribution towards national income, were similar.
- Reforms were introduced in 1978 in China, in 1988 in Pakistan and in 1991 in India.
- China introduced structural reforms on its own initiative while they were forced upon India and Pakistan by international agencies.
- The impact of policy measures were different in these countries — for instance, one-child norm has arrested the population growth in China whereas in India and Pakistan, a major change is yet to take place.
- Even after fifty years of planned development, majority of the workforce in all the countries depends on agriculture. The dependency is greater in India.
- Though China has followed the classical development pattern of gradual shift from agriculture to manufacturing and then to services, India and Pakistan's shift has been directly from agriculture to service sector.
- China's industrial sector has maintained a high growth rate while it is not so in both India and Pakistan.
- China is ahead of India and Pakistan on many human development indicators. However these improvements were attributed not to the reform process but the strategies that China adopted in the pre-reform period.
- While assessing the developmental indicators, one also has to consider the liberty indicators.

EXERCISES

1. Mention some examples of regional and economic groupings.
2. What are the various means by which countries are trying to strengthen their own domestic economies?
3. What similar developmental strategies have India and Pakistan followed for their respective developmental paths?
4. Explain the Great Leap Forward campaign of China as initiated in 1958.
5. China's rapid industrial growth can be traced back to its reforms in 1978. Do you agree? Elucidate.
6. Describe the path of developmental initiatives taken by Pakistan for its economic development.
7. What is the important implication of the 'one child norm' in China?
8. Mention the salient demographic indicators of China, Pakistan and India.
9. Compare and contrast India and China's sectoral contribution towards GDP in 2003. What does it indicate?
10. Mention the various indicators of human development.
11. Define the liberty indicator. Give some examples of liberty indicators.
12. Evaluate the various factors that led to the rapid growth in economic development in China.
13. Group the following features pertaining to the economies of India, China and Pakistan under three heads

    One-child norm
    Low fertility rate
    High degree of urbanisation
    Mixed economy
    Very high fertility rate
    Large population
    High density of population
    Growth due to manufacturing sector
    Growth due to service sector.

14. Give reasons for the slow growth and re-emergence of poverty in Pakistan.

15. Compare and contrast the development of India, China and Pakistan with respect to some salient human development indicators.

16. Comment on the growth rate trends witnessed in China and India in the last two decades.

17. Fill in the blanks
    (a) First Five Year Plan of _____ commenced in the year 1956. (Pakistan/China)
    (b) Maternal mortality rate is high in _____. (China/Pakistan)
    (c) Proportion of people below poverty line is more in _____. (India/Pakistan)
    (d) Reforms in _____ were introduced in 1978. (China/Pakistan)

SUGGESTED ADDITIONAL ACTIVITIES

1. Organise a class debate on the issue of free trade between India and China and India and Pakistan.

2. You are aware that cheap Chinese goods are available in the market, for example, toys, electronic goods, clothes, batteries etc. Do you think that these products are comparable in quality and price with their Indian counterparts? Do they create a threat to our domestic producers? Discuss.

3. Do you think India can introduce the one-child norm like China to reduce population growth? Organise a debate on the policies that India can follow to reduce population growth.

4. China's growth is mainly contributed by the manufacturing sector and India's growth by the service sector—prepare a chart showing the relevance of this statement with respect to the structural changes in the last decade in the respective countries.

5. How is China able to lead in all the Human Development Indicators? Discuss in the classroom. Use Human Development Report of the latest year.

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