PREFACE

In the curricular structure introduced by this University for students of Post-Graduate degree programme, the opportunity to pursue Post-Graduate course in a subject is introduced by this University is equally available to all learners. Instead of being guided by any presumption about ability level, it would perhaps stand to reason if receptivity of a learner is judged in the course of the learning process. That would be entirely in keeping with the objectives of open education which does not believe in artificial differentiation.

Keeping this in view, study materials of the Post-Graduate level in different subjects are being prepared on the basis of a well laid-out syllabus. The course structure combines the best elements in the approved syllabi of Central and State Universities in respective subjects. It has been so designed as to be upgradable with the addition of new information as well as results of fresh thinking and analysis.

The accepted methodology of distance education has been followed in the preparation of these study materials. Co-operation in every form of experienced scholars is indispensable for a work of this kind. We, therefore, owe an enormous debt of gratitude to everyone whose tireless efforts went into the writing, editing, and devising of a proper lay-out of the materials. Practically speaking, their role amounts to an involvement in 'invisible teaching'. For, whoever makes use of these study materials would virtually derive the benefit of learning under their collective care without each being seen by the other.

The more a learner would seriously pursue these study materials the easier it will be for him or her to reach out to larger horizons of a subject. Care has also been taken to make the language lucid and presentation attractive so that they may be rated as quality self-learning materials. If anything remains still obscure or difficult to follow, arrangements are there to come to terms with them through the counselling sessions regularly available at the network of study centres set up by the University.

Needless to add, a great deal of these efforts are still experimental—in fact, pioneering in certain areas. Naturally, there is every possibility of some lapse or deficiency here and there. However, these do admit of rectification and further improvement in due course. On the whole, therefore, these study materials are expected to evoke wider appreciation the more they receive serious attention of all concerned.

Prof. (Dr.) Subha Sankar Sarkar
Vice-Chancellor

First Published :

Printed in accordance with the regulations of the
Distance Education Bureau of the University Grants Commission.

POST-GRADUATE: ECONOMICS

[M. A.]

Paper – 5

Economics of Social Sector

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M.A. : Paper-5
Economics of Social Sector

UNIT 1 ■ Importance of Social Sector

Structure

1.1 Objectives

After reading this unit, you will be able to:

- understand the meaning of social sector;
- know the importance of social sector;
- keep abreast of social infrastructure;
- know the scope of the social sector;
- understand the concept of economic welfare; and
- know the interconnection between social sector and economic welfare.

1.2 Introduction

The term social sector refers to the factors, which contribute to human capital formation and human development. Social development is recognized not only as a means to economic development, but also an end in itself, in terms of expanded individual opportunities, capabilities

and freedom. Improvements in the social sector pave the way for equity and in turn for economic development. In fact, effective human development and economic development itself depend on the development of social infrastructure. Thus, importance of social infrastructure hardly needs any elaboration. Social sector is an important sector for any economy and especially for developing economies, like India and includes several important component such as education, health and medical care, water supply and sanitation, poverty alleviation, housing conditions, etc. that have a vital contribution in human development. All these sum up to social infrastructure. Infrastructure here can broadly be defined as long-term physical assets that operate in markets with high barriers to entry, and enable the provisioning of goods and services. Examples of social infrastructure assets include schools, colleges, universities, libraries, technical training institutes, hospitals, prisons and community housing whose smooth functioning ensures a vibrant social sector.

1.3 Definition of Social Sector

It is difficult to come across a formal definition that universally signifies social sector. Generally though the term social sector is used to refer to sectors like education, health and nutrition, etc. that are concerned with the provisioning of 'merit goods', which are socially valuable but which may not always bring immediate or direct economic returns, in short run. In the evolution of the concept of the social sector, two distinct but related approaches can be identified— the human capital approach and the human development approach. The first approach, the human capital approach emphasizes expenditure on education, health and nutrition as a means of enhancing the quality of human capital, which is generally defined as the stock of skills and productive knowledge embodied in people. The human capital approach attracted attention during the 1960s when Schultz (1961) and Becker (1962) highlighted the viewpoint that education, health and nutrition cannot be considered merely as consumption goods.

The second approach is known as the human development approach. It views basic attainments in education, health and nutrition, etc. as an end in itself rather than a means to higher productivity and higher earnings. In this approach, the ultimate goal is to improve the quality of life of the people and measures such as education, health and nutrition are emphasized for their intrinsic value and for their role in enhancing the basic capabilities of the people. Thus, in this approach, social sector stands for those sectors that help in the building up of human capabilities. The emergence of this approach can be traced back to the efforts by economists such as Sen (1981, 1985) who defined human well-being in terms of functioning and capabilities rather than in terms of access to commodities.

In the human capital approach, on the other hand, investment in education, health, etc. is governed by the rates of return to such investment. In this approach, the acquisition of education, health, etc. are considered as basic rights of the people and are promoted even if the conventionally measured rates of return on these investments are low. Since access to education, health, etc. are considered as fundamental human rights, this

approach assigns a key role to the State in providing these rights. Hence, there is a greater emphasis on the supply of public services. Here, it should be noted that in the human development approach, contrary to the human capital approach, the focus of attention is not merely on workers who contribute to the production process but also to the old and infirm who may not be in a position to make an economic contribution. It is obvious then, that the human development approach seem more appropriate for developing countries, like India that are characterized by extensive poverty and social backwardness. In fact, it is being increasingly realized that even for human capital to contribute to economic growth, it is essential to ensure a minimum level of human development. Based on these alternative approaches, Prabhu (2001) has defined social sectors 'as those providing social security'. Traditionally, the term social security has been used by the International Labour Organization (ILO) to refer to the protection which society provides for its members through a series of measures against the economic and social distress that otherwise would be caused by the stoppage or substantial reduction of earnings resulting from sickness, maternity, employment injury, unemployment, invalidity, old age and death; the provision of medical care, and the provision of subsidies for families with children. However, Dreze and Sen (1989) have argued that such a definition of social security is not appropriate for use in the context of developing countries, where the bulk of employment is in the informal sector. They view social security essentially as an objective to be pursued through public means rather than as a narrowly defined set of particular strategies. Economists have termed the ILO-type measures as protective social security while it is argued that the Dreze and Sen connotation includes both protective and promotional social security. Protective social security generally includes specific measures (such as old age pensions) that provide relief from or protection against some kind of deprivation or insecurity. Promotional social security, on the other hand, includes all such measures that aim at improving endowments, exchange entitlements, real incomes and social consumption. Thus, poverty alleviation programmes, employment generation programmes, environmental conservation programmes, provision of basic needs and the public distribution system get included under promotional social security.

Social security viewed in this wider sense, as perceived by Dreze and Sen, includes both protective and promotional social security that not only helps in linking the concepts of social security and human development, but also provides for a comprehensive framework for the analysis of social sector. Hence, the term social sector refers to education, health and nutrition as well as to poverty alleviation programmes (including asset and employment generation programmes) and social assistance measures. We can, thus, say that social sector refers to all those sectors that are essential for improving the quality of life of the people. It includes not only sectors like education, health and nutrition, but also those sectors that are concerned with eradication of poverty and other programmes of social welfare. In a broader sense, the issues related to gender discrimination, environmental degradation, etc. also come under the purview of social sector development.

1.4 Social Infrasturcture

Social infrastructure refers to the community facilities, services and networks that help individuals, families, groups and communities meet their social needs, maximize their potential for development, and enhance community wellbeing. Social infrastructure includes, universal facilities and services such as education, training, health, welfare, social services, open space, recreation and sport, safety and emergency services, learning, religious, arts and cultural facilities, civic and democratic institutions, and community meeting places. These are lifecycle-targeted facilities and services, such as those for children, young people and older people e.g., early childhood centers and retirement villages. Targeted facilities and services for groups with special needs, such as families, people with disabilities and people from culturally diverse backgrounds Just as economic infrastructure, such as roads, energy and ports supports the economy; social infrastructure supports the wellbeing of families and communities. Social infrastructure provides the vehicle for a range of important functions for people and communities. Sense of belonging and inclusion are achieved from both the presence of the facilities and the activities that occur within them e.g., community centers, parks, public art and open space. Educated community and workforce is achieved by institutions such as preschools, primary, intermediate and secondary education and tertiary education. Networking and community interaction occur from events, local networks and activities democratic participation and citizenship – voting, taking part in civic affairs and standing for election physical and mental health – from health service provision to the facilities that encourage physical activity and/or social interaction e.g. reserves, halls, action and community centers spiritual and cultural wellbeing – from faith based, cultural and spiritual organizations, networks and facilities Creative expression – through arts and cultural institutions.

Generally, the purpose of social infrastructure is based on some key objectives. These are that social infrastructure should:

- Be targeted to local needs and reflective of community priorities to ensure they are tailored to the particular social needs of the area they serve.
- Understanding and responding to the unique and individual circumstances of each area increases the utilization of facilities and ensures that they address the needs and interests of the local population.
- Contribute to the health, well-being and quality of life of members of the community through a range of services, activities and programs that support the lifestyle needs, foster social networks and social interaction between different groups, contribute to social cohesion and social inclusion and build the skills and capacity of individuals and groups.

Other general objectives of social infrastructure include that it should :

- Ensure equitable access for all members of the community to a range of community spaces;

- Provide access to affordable programs, activities, services and events to the community;
- Promote strategic priorities such as community wellbeing, lifelong learning and social inclusion;
- Provide life skills, health, recreation, leisure and learning programs which build skills and address community interests;
- Provide space for a range of both formal and informal activities that promote social connectivity and sense of community;
- Ensure the efficient use of resources to ensure maximum community benefit is obtained within available resources;
- Involve a range of measures to involve community members in planning, programming, operation and management so as to build community capacity and ownership;
- Provide volunteering opportunities to build skills, confidence and enhance community members wellbeing and sense of belonging;
- Be designed and managed in a flexible way to ensure they are able to respond to changing to community needs;
- Promote sustainability through the integration of social infrastructure with public transport networks and through energy efficient building design;
- Ensure accountability and the delivery of community benefits by monitoring and evaluating the social outcomes produced by social infrastructure and ensuring they are meeting identified community needs.

Hence, investment in social infrastructure is also directly related to the aims of increasing productivity and promoting growth. Thus, investment in human capital is as important as investment in material or physical capital. Recognizing the complementarity of the two types of infrastructure, it is important that development of social infrastructure is planned with similar priority.

1.5 Why Study the Economics of Social Sector?

It is quite obvious from the definition of social sector that the level of development of this sector directly affects the level of human development of a region. However; the social sector can play a vital role in influencing the rate of economic growth as well. As the social sector develops, quality of life improves, leading to better quality human capital that leads to higher total factor productivity. Thus, the achievement in economic front is closely dependent on and related to that in social sector.

This can be seen by comparing the cases of India and China. Dreze and Sen (1995) have made a detailed study of the relative positions of the two countries over time. They contend (on the basis of available evidence) that in the late 1940s, living conditions in the two

countries were probably not very different from each other. Both countries were among the poorest in the world and had high levels of mortality, under-nutrition and illiteracy. However, they now stand quite far apart — both in terms of economic and social sectors attainments

Within India, the experience of Kerala also demonstrates the importance of social sector attainments in influencing human development as well as economic growth. Kerala's development experience has always raised intellectual curiosity as it was considered to be an exemplary case that could be used to demonstrate the general possibility of achieving high levels of social development even with very little economic advancement. Kerala's experience was, thus, held up as a "model" for the developing world, and the so-called "Kerala model" eventually became part of the global development discourse. Opinions on the "model", however, differed significantly. While some economists have admired the model, some have been less enthusiastic about it. The sceptics have raised questions regarding the sustainability of Kerala's development pattern. It has been argued that lack of economic growth and persistently high unemployment in Kerala would lead to a situation of crisis which would stop further progress in human development. The state would fail to generate enough revenue to finance and maintain its social sector expenditure, and the fiscal crisis we often see is reflective of a deeper structural crisis of continuous stagnation in the productive sectors of the economy. The Human Development Report 1996 also voiced the same opinion as it observed that the record of economic growth and human development over the past 30 years shows that no country can follow a course of lopsided development for such a long time — where economic growth is not matched by advances in human development, or vice versa. But in spite of these apprehensions, for a rather long time, Kerala had been living with a course of lopsided development— its remarkable human development achievements were not matched by economic growth. If we take a look at Kerala's performance in the economic sector, we find that during the period from the early 1960s to the end of the 1980s, in every sub period the growth rate of Kerala's NSDP was much below the all-India average. While between 1970-71 and 1980-81, Kerala's NSDP (at 1970-71 prices) grew at 2.27% per annum, between 1980-81 and 1987-88, the growth rate further came down to a mere 1.16%, even though India's NDP grew at 4.71% during the same period. Thus, for almost 30 years between the late 1950s and 1987-88, Kerala's economic performance has been well below average. However, Kerala's poor performance in the economic sector has not affected its achievements in the social sector. That Kerala has not faltered on the basic dimensions of human development in spite of its long period of slow economic progress is clear from the following quick review of its achievements. At the beginning of the present century, Kerala's life expectancy at birth was 73.3 years, which compared well with Asian countries like South Korea, Malaysia, China and Indonesia which, unlike Kerala, had already achieved high levels of per capita income. Kerala's female to male ratio, which is 1.058, is similar to that of Europe and North America, and substantially higher than the figures for China (0.94) or the rest of India (0.93). The infant mortality rate is only 13 per thousand live births. Besides the fact that there is no female disadvantage in any of the indicators related to health status, the relative advantage seems to have increased over time. For instance, women in Kerala, who were expected to live only 1 year longer than men in the 1950s, are expected to live 5.5 years longer in the 1990s, whereas in India as

a whole, women are expected to live only 1.2 years longer than men. Kerala is much ahead of the other major Indian states in achieving the goal of universal elementary education, which is reflected in a literacy rate of over 90%, almost universal enrolment and very low dropout rates at the primary and middle level. Moreover, there is hardly any gender gap in school education. However, on economic front, Kerala can no longer be seen as a relatively poor state when one compares its per capita income with the all-India average. Empirical evidences show that Kerala has indeed been experiencing fairly good growth since the end of the 1980s. For about the past 15–20 years or so, Kerala's economy has been growing at a rate of 5.8% per annum on an average, which is close to the all-India average.

We can, thus, sum up Kerala's development experience in terms of two observations. First, Kerala has not faltered on human development in spite of the long period of slow economic progress in the past. And second, growth has not eluded Kerala after all. For the past 15 years or so, Kerala's SDP has been growing at a rate that is very close to the all-India average, and its per capita SDP has been growing even faster than the all-India average because of its low population growth.

Tamil Nadu also exemplifies a middle-income state with reasonable good attainments in the social sector. Prabhu (2001) has compared the levels of social sector development of Maharashtra and Tamil Nadu. The study, which covers the period 1988-89 to 1995-96, finds that despite having different levels of per capita income Maharashtra and Tamil Nadu had similar levels of attainment with respect to several social indicators. However, policies pursued by the respective state governments in respect of social sectors were quite different. While Maharashtra emphasized promotional social security (like employment generation schemes), Tamil Nadu emphasized protective social security (like midday meal schemes). In fact, these two states represent two different typologies of development. Maharashtra represents a relatively rich state where human development is more a function of the level of income. On the other hand, Tamil Nadu exemplifies the efforts of a middle-income state that has tried to enhance the level of human development through conscious efforts at formulating and implementing programmes for the benefit of the poorer sections. The allocations to the social sectors were higher in Tamil Nadu compared to Maharashtra. This shows that it is possible to achieve reasonably good levels of human development even without attaining very high levels of per capita income.

The above discussion suggests that countries/states that have given priority to social sector development have performed better with respect to human development and have ultimately attained high rates of economic growth too. In fact, there exists a strong nexus between economic growth and human development. On the one hand, economic growth provides the resources to permit sustained improvements in human development. On the other, improvements in the quality of the labour force are an important contributor to economic growth. But there is now a growing consensus that where choice is necessary human development should be given sequencing priority. And since social sectors directly affect the level of human development of a country, this calls for giving priority to social sector development.

1.6 Concept of Economic Welfare

Economic welfare is a general concept which doesn't lend to easy definition. Basically, it refers to how well people are doing. Economic welfare is usually measured in terms of real income/real GDP. An increase in real output and real incomes suggests people are better off and therefore there is an increase in economic welfare.In actuality, welfare is a happy state of human mind.

Broadly, economic welfare is the level of prosperity and standard of living of either an individual or a group of persons. In the field of economics, it specifically refers to utility gained through the achievement of material goods and services. According to Roefie Hueting, welfare is dependent on factors like employment, income distribution, labour conditions, leisure time, production and the scarce possible uses of the environmental functions. Thus, welfare economics is the economic study of the definition and the measure of the social welfare; it offers the theoretical framework used in public economics to help collective decision making, to design public policies, and to make social evaluations. Economic welfare is measured in different ways, depending on the preferences of those measuring it. Factors used to measure the economic welfare of a population include: GDP, literacy, access to health care, and assessments of environmental quality.

However, economic welfare will be concerned with more than just levels of income. For example, people's living standards are also influenced by factors such as levels of health care, and environmental factors, such as congestion and pollution. These quality of life factors are important in determining economic welfare.

Factors influencing economic welfare are :

- Real income – influencing potential consumption
- Employment prospects – unemployment significant cost
- Job satisfaction – satisfaction at work as important as income and wage
- Housing – High income but unaffordable housing diminishes economic welfare. Good, cheap housing essential to economic welfare
- Education – opportunities to study through lifetime, influence welfare
- Life expectancy and quality of life – access to healthcare, also are lifestyles healthy, e.g., levels of obesity/smoking rates
- Happiness levels – normative judgements on whether people are happy.
- Environment – economic growth can cause increased pollution, which damages health and living standards
- Leisure time – high wages due to working very long hours diminishes economic welfare. Leisure has economic value.

1.7 Social Sector and Welfare

There is now a growing realization that the social services, like health and education, are not merely to be treated as welfare activities but are essentially in the form of investment in human capital. Welfare economics focuses on the optimal allocation of resources and

goods and how the allocation of these resources affects social welfare. This relates directly to the study of income distribution and how it affects the common good Continuing investments in the social sectors have been recognized by the international community. In 2000, the Millennium Development Goals were established, which comprise explicit targets to tackle extreme poverty and promote human development. To this end, much of the increase in development assistance has been directed towards the social sectors. Social policy and the institutions and public resources that facilitate the allocation of social services have long been recognized for their intrinsic and instrumental values for human capital formation. Education and health policies and the provision of social protection benefits can have profound effects on social and economic progress of nations

It has become clear that social problems that may accompany economic growth cannot be left aside until economic development has taken place because development is a never ending process and cannot be sustained in the long run while social ills are increasing.

Furthermore, social problems are best and most economically solved when economic development is taking place and not after the fact. Social development, in terms of greater participation of the population in decision-making and in the execution of development activities, that minimizes poverty and promotes equity, that advances the status of women and integrates youth in the development process and that insures, in general, a more humane social environment, itself plays a major positive role in the long-run intensity and sustainability of economic development.

The central message is there is no automatic link between economic growth and human development, but when these links are forged with the policy and determination, they can be mutually reinforcing and economic growth will effectively and rapidly improve human development. Government policies are vitally important, as now we know the limits of trickle-down economics. For economic growth to lead to fuller choices to all people – rather than a few choices for most people or many choices for a few – human development and poverty reduction must be moved to the top of the agenda for political and economic decision making. This is the reason why social sector is so important for economic welfare.

1.8 Conclusion

Welfare is a state of the mind which reflects human happiness and satisfaction. Economic welfare is that part of social welfare which can directly or indirectly be measured in money. Economic welfare depends not only on the amount of income but also on the methods of earning and spending it. When the workers earn more by working in factories but reside in slums and vitiated atmosphere, the total welfare cannot be said to have increased, even though the economic welfare might have increased. Similarly, as a result of increase in their expenditure proportionately to, income, the total welfare cannot be presumed to have increased, if they spend their increased income, on harmful commodities like wine, cigarettes etc. Hence, economic welfare is not an indicator of total welfare. The actual relation between the distribution of national income and economic welfare concerns the latter form of transfer

when wealth flows from the rich to the poor. The redistribution of wealth in favor of the poor is brought about by reducing the wealth of the rich and increasing the income of the poor.

Social sector refers to all those sectors that are essential for improving the quality of life of the people. It includes not only sectors like education, health and nutrition, but also those sectors that are concerned with eradication of poverty and other programmes of social welfare. The issues related to gender discrimination, environmental degradation, etc. also come under the purview of social sector development. Development of the social sector, in terms of greater participation of the population in decision-making and in the execution of development activities, that minimizes poverty and promotes equity leads to economic welfare. The notion of social sector is thus of primary importance to the economic welfare which in turn is the main objective of the development process of any economy.

1.9 Key Terms Simplified

Social Assets : Education, health and medical care, nutrition, water supply and sanitation, poverty alleviation, housing conditions etc. that play a vital contribution in human development.

Intrinsic values : The value derived from its role as a means toward an end other than itself. Thus it is the value derived for its own sake and not from its usefulness in achieving a goal.

Promotional social security : Specific measures (such as old age pensions) that provide relief from or protection against some kind of deprivation or insecurity.

Protective social security : All such measures that aim at improving endowments, exchange entitlements, real incomes and social consumption.

Human development : The process of enlarging people's freedoms and opportunities and improving their well-being. It is about the real freedom ordinary people have to decide who to be, what to do, and how to live. The concept was developed by economist Mahbub ul Haq.

Economic growth : an increase in the amount of goods and services produced per head of the population over a period of time.

Economic development : The process by which a nation improves the economic, political, and social well-being of its people.

Kerala model : The Kerala model of development is a model of development based on the practices adopted in the state of Kerala, India. The development standard in Kerala is comparable to that of many first world nations, and is widely considered to be the highest in India at that time. Despite having high standards of human development, the Kerala Model ranks low in terms of industrial and economic development.

Midday Meal Scheme : It is a school meal programme of the Government of India designed to better the nutritional standing of school-age children nationwide. The programme supplies free lunches on working days for children in primary and upper primary classes in government, government aided, local body, Education Guarantee Scheme, and alternate innovative

education centres, *Madarsa* and *Maqtabs* supported under Sarva Shiksha Abhiyan, and National Child Labour Project schools run by the ministry of labour. Serving 120,000,000 children in over 1,265,000 schools and Education Guarantee Scheme centers, it is the largest of its kind in the world.

Millennium Development Goals : The Millennium Development Goals were eight international development goals for the year 2015 that had been established following the Millennium Summit of the United Nations in 2000, following the adoption of the United Nations Millennium Declaration.

Components of Social Infrastructure : Health, drinking water, disease eradication, public hygiene, family planning, medical facilities, education – literacy, schools, colleges and universities, professional education, technical and industrial schools, development disciplines.

1.10 Questions with Answer Hints

Questions Carrying 2.5 marks

1. Define Social sector?

   [Answer: See first paragraph of section 1.2]

2. Define Social infrastructure.

   [Answer: See last paragraph of section 1.2]

3. Give some examples of social infrastructure assets.

   [Answer: See last paragraph of section 1.2]

4. What are the approaches to social sector?

   [Answer: See first paragraph of Section 1.3]

5. Define economic Welfare.

   [Answer: See first paragraph of Section 1.6]

Questions Carrying 5 marks

1. What do you mean by Human Capital approach to Social sector?

   [Answer: See second paragraph of Section 1.3]

2. What do you mean by Human Development approach to Social sector?

   [Answer: See third paragraph of Section 1.3]

3. State the key objectives of social infrastructure.

   [Answer: See second paragraph of Section 1.4]

4. State the general objectives of social infrastructure.

   [Answer: See third paragraph of Section 1.4]

5. Why is it important to study the social sector of an economy?

   [Answer: See first paragraph of Section 1.5]

6. State the factors influencing economic welfare.

   [Answer: See first paragraph of Section 1.6]

Questions Carrying 10 marks

1. What are the approaches to social sector

   [Answer: See Section 1.3]

2. Write a short note on social infrastructure.

   [Answer: See first paragraph of Section 1.4]

3. Discuss the importance of social sector in the context of a developing economy like India.

   [Answer: See Section 1.5]

4. Elaborate the human development aspect of social sector in context of India.

   [Answer: See first paragraph of Section 1.5]

5. How is the concept of social sector related to the concept of economic welfare?

   [Answer: See Section 1.7]

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UNIT 2 ■ Social Development and Deprivation

Structure

2.1 Objectives

After reading this unit, you will be able to:

- understand the meaning of social development;
- know the relation between growth, development and deprivation;
- understand development indices;
- quantify development through HDI, inequality adjusted HDI, GDI, GEM;

- know deprivation indices;
- measure deprivation through Sen's Index, multidimensional deprivation, HPI, MPI

2.2 Introduction

In terms of wealth, it is perhaps easier to identify countries that are richer or poorer than others. However, the typical indicators of wealth only reflect the amount of resources available to a specific society. They don't offer any details about the allocation of said resources, like information about the equitable distribution of income among different social groups; or about the shares of resources used to offer free education and health services; or even about the effects of production and consumption on the environment. This is one of the biggest reasons why nations with similar average incomes differ widely with regard to their population's quality of life, employment opportunities, education and health care, the availability of clean air and safe drinking water, and the threat of crime, among other factors. Growth can be gained by compromising on equality, employment, democracy, cultural identity, and consumption of natural resources necessary for future generations. So, while growth was achieved, all these other elements were adversely affected. With a deeper understanding of the links between economic prosperity and the growth of social and environmental factors, it is now widely acknowledged by experts and economists that this kind of growth is not sustainable, and must be transformed. If social/human and environmental losses due to economic growth are observed to be greater than the economic merits (in terms of higher incomes by the majority of the population), the general result for people's wellbeing tends to become negative. This kind of economic growth, therefore, becomes hard to sustain politically.

Sustainable development entails economic and social justice which means lesser deprivation and more opportunities. To look into the development performance of any region one has to quantify the deprivation and development of an economy. A successful strategy of poverty reduction and improved socio-economic justice must have at its core measures to promote rapid and sustained economic development. The challenge for policy is to combine growth promoting policies with policies that reduce deprivation, inequality and allow the poor to participate fully in the opportunities unleashed and so contribute to that development. This includes policies to make labour markets work better, remove gender inequalities and increase financial inclusion.

2.3 Concept of Social Development

Social development is about improving the well-being of every individual in society so they can reach their full potential. The success of society is linked to the well-being of each and every citizen. Social development means investing in people. It requires the removal of barriers so that all citizens can have the opportunity to grow, develop their own skills and contribute to their families and communities in a meaningful way. If they are healthy, well-

educated and trained to enter the workforce and are able to make a decent wage they are better equipped to meet their basic needs and be successful. Their families will also do well and the whole of society will benefit.

Social development is the process of social changes that are designed to improve the living standard of a society, by improving the economic development. It also refers to the changes in the social order within a society. It may also refer to the notion of sociocultural evolution, or 'social progress'. Social development should reflect the society's desire to live in prosperity and equality. Each member of the community must have achieved freedom from colonial rule and be actively involved in the process of development leading to a dignified and high-quality lifestyle. Social development is an important aspect in a country. When a society is strong, indirectly a country will always be strong and stable whether economically, socially, or politically. Therefore, in the building of a strong country or civilization, the aspect of social development has to be emphasized.

The concept of 'social development' is the result of phrase 'welfare' born earlier. In 1969, the United Nations Conference of Social Welfare Ministers emphasized the social welfare activities to control the development of society by promoting and planning implementation and administration section. Social welfare is functioning in broader aspects in the social development of countries. In other words, social development can be considered to strive to meet some functions, such as providing quality service to ensure that the objectives meet the social well-being, identified the effect on changes in life and adapt to the social condition; identify the impact of policies and programs to minimize its impact on society and to identify and eliminate social factors that have impact on social problems.

2.4 Development and Deprivation

Economic growth is the most powerful instrument for reducing poverty and improving the quality of life in developing countries. Both cross-country research and country case studies provide overwhelming evidence that rapid and sustained growth is critical to making faster progress towards the Millennium Development Goals. Growth can generate virtuous circles of prosperity and opportunity. Strong growth and employment opportunities improve incentives for parents to invest in their children's education by sending them to school. This may lead to the emergence of a strong and growing group of entrepreneurs, which should generate pressure for improved governance. Strong economic growth therefore advances human development, which, in turn, promotes economic growth. But under different conditions, similar rates of growth can have very different effects on poverty, the employment prospects of the poor and broader indicators of human development. The extent to which growth reduces poverty depends on the degree to which the poor participate in the growth process and share in its proceeds. Thus, both the pace and pattern of growth matter for reducing poverty.

Economic development is a broader concept than economic growth. Development reflects social and economic progress and requires economic growth. Growth is a vital and necessary

condition for development, but it is not a sufficient condition as it cannot guarantee development. One of the most convincing definitions of development is that which is proposed by Amartya Sen states that, development is about creating freedom for people and removing obstacles to greater freedom. Greater freedom enables people to choose their own destiny. Obstacles to freedom, and hence to development, include poverty, lack of economic opportunities, corruption, poor governance, lack of education and lack of health. The word 'development' is widely used to refer to a specified state of advancement or growth. It could also be used to describe a new and advanced idea or product; or an event that constitutes a new stage under changing circumstances. Generally, the term development describes good change. In this regard, term 'development' is used as:

A vision: Here, the term is used to describe how desirable a society or a region is, possibly with regard to what it can become.

A historical process: This refers to social change that occurs over extended periods of time due to inevitable processes. For instance, it is widely believed that both communism and capitalism are an inevitable outcome of progress.

Action: This refers to deliberate action to change things for the better, as with providing aid to alleviate hunger

All of these are definitions of development, but when it comes to distinguishing between nations that are more developed than others, or when describing some other international aspect, usually more meaning is implied in the word. The term deprivation on the other hand stands for the condition of a system or a community or a region which is lacking the basic necessities of a society or community. Analogically, socio-economic deprivation can be described as the lack of social and economic benefits which are considered to be basic necessities of a society or community or in a broader sense of a region. The regions with high demand and low supply of basic requirements often exhibit poor social and economic status compared to the other adjacent regions which mark the former as socioeconomically deprived region.

Economic growth also needs to be constantly fed on the fruits of human development, such as a more qualified workforce with the capacity to innovate along technological and managerial lines for optimized use of their time; more favourable conditions for the growth of new businesses; more and better jobs; and greater democracy at different levels of decision-making. On the other hand, slow human development can adversely affect, and possibly bring to a halt, fast economic growth. The Human Development Report published in 1996 claims that not a single nation in the period between 1960 and 1992 was able to move from asymmetrical development characterized by slow human development and rapid growth to an ideal scenario where human development and growth could be mutually reinforcing**.**

The objectives of sustainable development fall in three categories:

Social objectives: These include education, security, equity, full employment, health, cultural identity, and participation, among others

Economic objectives: These include growth, stability, and efficiency, among others

Environmental objectives: These include a healthy environment for human beings, the

conservation of non-renewable natural resources, the rational use of renewable natural resources, etc.

The diversity of these objectives makes it a great challenge for any nation to attain perfect balance. For instance, one can justify a country that prioritizes national security over economic growth (income and employment) and environment sustainability. Although there is no definite, scientific method of performing such comparisons and valuations, governments are faced with such decisions regularly. For democratic republics, where decisions are made depending on the interests of the majority, then they must be made in the most participatory way possible. But even then, there is no guarantee that the long-term interests of children and the next generation will be accounted for because minors and future generations cannot cast a vote for themselves. To ensure that future generations inherit the needed conditions to sufficiently provide for their own wellbeing, present-day values must be informed enough to reflect their interests as well.

The necessary condition for sustainable development is equity and social justice. One of the biggest challenges for equity and balance is the fact that the world today is somewhat interdependent, and many aspects of sustainable development are global. So, on the one hand, many decisions taken at the local or national level have international consequences – social, economic, and environmental. In the event that these consequences are adverse, the situation is referred to as exporting unsustainability.

On the other hand, national policies are seldom adequate to effectively address the many challenges of sustainability. As such, it becomes indispensable for the international cooperation on an array of transboundary and global challenges of sustainable development. When it comes to achieving sustainable development, one of the biggest problems, possibly the biggest, is eradicating extreme poverty – both at the national and international level.

It has become clear that deprivation that may accompany economic growth cannot be left aside until economic development has taken place because development is a never ending process and cannot be sustained in the long run while social ills are increasing. Furthermore, social problems are best and most economically solved when economic development is taking place and not after the fact. Solving the problem of crime at its beginning is exceedingly easier than after it has taken root or become organized. Most important, it is often the pursuit of the single goal of maximizing income growth that causes the social problems in question. The geographic location of industry and other economic activities on purely economic principles may result in the concentration of these activities in and around the major city, which necessitates labour movements that disrupt family life with attendant social problems. It may increase the marginalization of certain regions and groups of the population that are not directly touched by this concentrated investment, thus increasing the gap between rich and poor within the nation. It may also result in a deteriorating physical environment and in a social environment that causes social unrest that ultimately destroys the fruits of economic growth. Conversely, social development, in terms of greater participation of the population in decision-making and in the execution of development activities, that minimizes poverty and promotes equity, that advances the status of women and integrates youth in the development process and that insures, in general, a more humane social environment, itself

plays a major positive role in the long-run intensity and sustainability of economic development.

The human development approach is, therefore, one that calls for a simultaneous treatment of economic and social aspects of development. Sustainable human development is development that not only generates economic growth, but distributes its benefits equitably; that regenerates the environment rather than destroying it; that empowers people rather than marginalizing them. It gives priority to the poor, enlarging their choices and opportunities and providing for their participation in decisions affecting them. It is developed that is pro-poor, pro-nature, pro-jobs, pro-women and pro-children.

Of course, human development does not deny the importance of economic growth and it accumulation for the welfare of society. It claims, however, that economic growth is a necessary but not a sufficient condition of human development. Even before great wealth is accumulated, major improvements in the quality of life are possible. A society does not have to be rich to be able to afford democracy. A family does not have to be wealthy to respect the rights of each member. A nation does not have to be affluent to treat women and men equally. Furthermore, wealth is not the only thing people enjoy in spite of its importance to welfare. Human beings may also want to enjoy long and healthy lives, drink deep at the fountain of knowledge, participate freely in the life of their community, breathe fresh air and enjoy the simple pleasures of life in a clean physical environment and value the peace of mind that comes from security in their homes, in their jobs and in their society.

2.5 Development Indices

When comparing the development of different countries, the most common approach examines the GNP (or GDP) per capita. But as already discussed above, higher per capita income does not necessarily mean that its population is better off than those in a nation with lower income, because there are numerous aspects of human well-being that are not accounted for in these indicators. According to Maslow's hierarchy of needs, the basic necessities refer to the food, shelter and warmth. The development of any region primarily depends on the fulfilment of these three prime factors. But practically, it is difficult to measure the development of any community or regional system only in terms of availability of food, shelter and warmth. The fundamental factors have to be more specific and quantified to assess the degrees of development or deprivation. Therefore a set of quantitative indicators which collectively represent the prime factors of development or deprivation known as indices were developed to measure the overall development of any regional system.

The World Bank uses development diamonds to illustrate relationships among four socioeconomic indicators for a given country, relative to the averages for that country's income group (high-income, upper-middle income, lower-middle income, and low-income).

These are: Gross primary or secondary education enrolment, Life expectancy at birth, Access to safe water, GNP per capita, these aspects are presented, one on each axis and then connected with bold lines to form a polygon. The resulting "diamond" shape can then be

used for comparison purposes. This system, however, makes it hard to compare development achievements in countries with different income groups.

UN experts prefer to use the human development index (HDI), which is a simple average of three indexes identifying a nation's achievements in: Health and longevity (based on life expectancy at birth), Education (based on adult literacy and combined primary, secondary, and tertiary enrolments) and Living standard (based on GDP per capita in purchasing power parity (PPP)). According to the UN, achievement in each area is determined by assessing to what extent each country has achieved these goals: Life expectancy of 85 years, 100 percent adult literacy and enrolments, Real GDP per capita of $40,000 in PPP. No country has yet attained these goals, so the parameters are expressed as decimals or fractions of the ideal. The one problem with the HDI system is that it does not allow one to make judgment relative to its different components, or understand why a nation's index changes over time. But compared to the development diamond approach, the human development index is much better since it allows for countries to be ranked in order of their achievements in human development. For more detailed analysis, the UNDP uses the human poverty index (HPI) to identify the proportion of people deprived of the opportunity to reach a certain basic level in each area.

So, whilst the HDI represents development achievements for the average citizen, the HPI helps to identify how evenly the benefits of development are spread within a country. A higher HPI indicates a greater level of deprivation, which translates to a higher level of poverty. The fundamental factors have to be more specific and quantified to assess the degrees of deprivation. Therefore a set of quantitative indicators which collectively represent the three prime factors of development need to be identified to measure the overall development of any regional system.

2.6 Human Development Index (HDI)

The HDI was introduced in 1990 as part of the United Nations Development Programme (UNDP) to provide a means of measuring economic development in three broad areas - per capita income, health and education. It is a composite index measuring average achievements in three basic dimensions of human development- a long and healthy life, knowledge and a decent standard of living. The performances of HDI based indicators also reflect the quality of life of people of any particular region. As example, it can be stated that low per capita income (economic indicator) leads to poor quality of housing, high illiteracy rate (knowledge indicator) leads to less awareness, less number of doctors and beds in hospitals (health indicator) leads to poor health condition etc. Performances of the indicators determine the state of deprivation and in a larger scale the pattern of deprivation for the whole region. There are several other vicious causal factors which act upon a region and make significant diverse changes in the performances of the indicators. The impact of the factors upon any regional system can be fatal as they expose the region towards different kinds of social and economic shocks, which in turn make a socio-economically deprived region highly sensitive. The factors can be of different types and can emerge from different dimensions. They can

damage in direct and indirect way to both tangible as well as intangible assets and eventually affect the quality of life of the people living in the affected region. The extent of damage depends on the nature and intensity of shocks generated by them. The HDI tracks changes in the level of development of countries over time. Each year, the UNDP produces a development report, which provides an update of changes during the year, along with a report on a special theme, such as global warming and development, and migration and development. The introduction of the index was an explicit acceptance that development is a considerably broader concept than growth, and should include a range of social and economic factors.

The HDI has two main features:

- A scale from 0 (no development) to 1 (complete development).
- An index, which is based on three equally weighted components: Longevity, measured by life expectancy at birth; Knowledge, measured by adult literacy and number of years children are enrolled at school; Standard of living, measured by real GDP per capita at purchasing power parity

An index of 0 – 0.49 means *low development.* An index of 0.5 – 0.69 means *medium development.* An index of 0.7 to 0.79 means *high development.* Above 0.8 means very *high development* The HDI is a very useful means of comparing the level of development of countries. GDP per capita alone is clearly too narrow an indicator of economic development and fails to indicate other aspects of development, such as enrolment in school and longevity. Hence, the HDI is a broader and more encompassing indicator of development than GDP, though GDP still provides one third of the index. A variety of factors may contribute to differences in life expectancy, including: The stability of food supplies, War, the incidence of disease and natural disasters. According to World Bank figures, life expectancy at birth in developing countries over the past 40 years has increased by 20 years. However, these increases, were not evenly distributed.

HDI is similar to PQLI (Physical Quality of Life India) in terms of the indicators but differs on the inclusion of income level in HDI and exclusion of the same from PQLI. It is known as one of the most motivated attempts to systematically and comprehensively analyse the comparative status of socioeconomic development in both developing and developed nations. HDI works better than PQLI as a measure of development because it represents both the physical and financial attributes of development. Moreover, HDI is better than other development indices because it effectively facilitates the evaluation of the progress of countries which allows inter-country comparison and inter-temporal comparisons of living levels. This is because HDI uses data that are available in most countries which allow for the widespread international comparisons. The composition of HDI appears to reward various social policies because the government can specifically find an associated cost or effort required to directly improve the three indicators of HDI. For example, developed countries can improve life expectancy by improving the health of their least advantaged groups thus achieve a better HDI score. However, HDI is not short of criticisms.

Despite the widespread use of the HDI there are a number of criticisms that can be made, like :

- The HDI index is for a single country, and as such does not distinguish between different rates of development within a country, such as between urban and traditional rural communities.
- Critics argue that the equal weighting between the three main components is rather arbitrary.
- Development is largely about freedom, but the index does not directly measures this. For example, access to the internet might be regarded by many as a freedom which improves the quality of people's lives.
- As with the narrow measure of living standards, GDP per capita, there is no indication of the distribution of income.
- The small number of indicators in HDI somehow impedes it to successfully capture various aspects of development, thus making it unable to respond better to social problems like, such as crime, corruption, poverty, deprivation, and negative externalities.
- GDP is calculated in terms of purchasing power parity, and the value can change.
- HDI is also argued to be a reductionist measure as it incorporates just a subset of possible human choices and leaves out many aspects of life that are of fundamental importance, according to the definition of human development by UNDP.
- The index also overlooked two important dimensions of human development, which are environment and equity. The exclusion of ecological considerations and equity as indicators of development inhibits the accurate representation of the realities of the world.
- Focusing exclusively on national performance and ranking does not accurately portray development from a global perspective. HDI has been criticised to be an incomplete measure of human development and painted a distorted picture of the world.
- HDI has ignored the gender inequality aspect in a society to represent the development of a country
- While HDI carries useful information about a country's current development, it ignores the future level of development as the index used an off-count of past efforts, rather than the estimation of the present efforts or prediction of the future

Overall, the HDI has been criticised to not successfully capture the richness and breadth of the concept of human development. Furthermore, the use of the equal weighted sums of each indicator in the HDI is also an issue. On one hand, the equal weighted sums of each indicator is a limitation to effectively measure the level of development, while on the other hand, it improves the index's goodness-of-fit given the added complexity of using unequal weights assumption. In the long run UNDP is recommended to refine the index to be more comprehensive and reflect more aspects of human development and inequalities within a country. From the analysis, it can be concluded that HDI is basically devised as a summary, not a comprehensive measure of human development. Since the introduction of HDI, so many critiques or comments to improve this development index have been presented.

Therefore, the search for future methodological and data refinements to HDI continues. As a result, so many various attempts to adjust the HDI have been done in continuity.

2.7 Inequality Adjusted HDI

The IHDI combines a country's average achievements in health, education and income with how those achievements are distributed among country's population by "discounting" each dimension's average value according to its level of inequality. Thus, the IHDI is distribution-sensitive average level of HD. Two countries with different distributions of achievements can have the same average HDI value. Under perfect equality the IHDI is equal to the HDI, but falls below the HDI when inequality rises.

The difference between the IHDI and HDI is the human development cost of inequality, also termed – the loss to human development due to inequality. The IHDI allows a direct link to inequalities in dimensions, it can inform policies towards inequality reduction, and leads to better understanding of inequalities across population and their contribution to the overall human development cost. A recent measure of inequality in the HDI, the Coefficient of human inequality, is calculated as an average inequality across three dimensions

2.8 Gender Development Index (GDI)

Besides HDI, HDR also presents other composite measures, a gender related index, namely Gender-related Development Index (GDI) and Gender Empowerment Measure (GEM). Both GDI and GEM were created to include gender inequality issues in human development. The GDI has been introduced by Anand and Sen in 1995 to penalize HDI if gender inequality exists in any of the three dimensions incorporated in HDI. GDI takes into account gender inequality in its overall assessment of aggregate human development in a country. GDI measures in the same dimension as HDI, discounting them for gender inequality. This means GDI should be interpreted as HDI discounted for gender disparities in its three components and should not be interpreted independently of HDI. Meanwhile, GEM is meant to be interpreted as an index of gender equity in political and economic participation and decision-making as well as power over economic resources. GEM consists of three indicators which are focusing on empowerment dimension. The selected indicators are male and female shares of parliamentary seats, male and female shares of administrative, professional, technical and managerial positions, and power over economic resources. Since the introduction of GDI and GEM in 1995, several other indicators that directly measure gender inequality have also been constructed such as the Relative Status of Women (RSW) Index, the Standardized Index of Gender Equality (SIGE), and the Gender Equality Index (GEI). These indices were developed due to the shortcomings and misinterpretation of GDI and GEM in many reports and academic writings. Researchers are looking for indicators which directly measure gender inequality. GDI and GEM are both known as rarely used indices

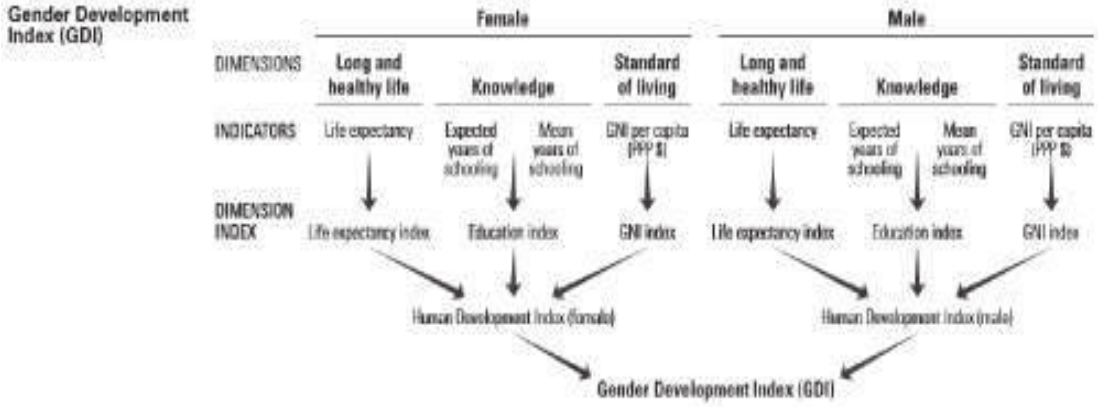
which receive minimal attention and have not been highlighted in the international press. This is because of their limited information and empirical value added. In addition, GDI has always been misunderstood by most studies as a direct measure of gender inequality, therefore leading to the misinterpretation and misuse of the index.

This shows that the computation of GDI is confusing and vague for people to understand the idea of this index. Besides that, GDI and GEM were also criticized because they do not adequately reflect gender inequality dimensions neither in developing countries, nor in developed countries. However, both of these indices have an advantage compared to other gender equality indicators in terms of the separation of dimensions of basic capabilities (GDI) and empowerment (GEM). Schuler (2006) highlights that it is preferable to separate these two dimensions because different countries may have gender equality in basic capabilities but look very different in the dimension of empowerment and vice versa.

The GDI measures gender gaps in human development achievements by accounting for disparities between women and men in three basic dimensions of human development—health, knowledge and living standards using the same component indicators as in the HDI. The GDI is the ratio of the HDIs calculated separately for females and males using the same methodology as in the HDI. It is a direct measure of gender gap showing the female HDI as a percentage of the male HDI. For more details on computation see Technical Notes.

The GDI is calculated for 164 countries. Countries are grouped into five groups based on the absolute deviation from gender parity in HDI values. This means that grouping takes equally into consideration gender gaps favouring males, as well as those favouring females.

The GDI shows how much women are lagging behind their male counterparts and how much women need to catch up within each dimension of human development. It is useful for understanding the real gender gap in human development achievements and is informative to design policy tools to close the gap.



2.9 Gender Empowerment Measure (GEM)

In developing countries, as women are subject to various forms of inequality they are caught in 'inequality trap.' This gender inequality, being undesirable, needs to be closed. This requires empowerment of women. In this respect, women themselves have to come forward. In other words, empowerment of women is linked to the 'agency of women'. Amartya Sen, while emphasising the importance of women's agencies for securing gender justice and hence social progress, argues that gender inequality does not decline automatically with the process of economic growth. In this respect, activities of women's organisations and other forms of agency that promote, say, female labour force literacy, female literacy, demographic change, etc., are of crucial importance, as far as empowerment of women is con-cerned. Empowering does not come from above; it has to come from the grassroots level. When this happens, women's empowerment then influences positively on the lives of both women and men and children. This then brings about both development and social progress.

Five elements of women's empowerment are:

(i) Education,

(ii) Ownership rights over property and assets,

(iii) Position and status of women in the labour market,

(iv) Opportunities to work, and

(v) Familiar and societal attitude regarding women's employment. For overall development of a society, empowerment of women is prerequisite.

The Human Development Report, 1995 focusing on women's opportunities rather than their capabilities introduced 'Gender Empowerment Measure' or GEM.

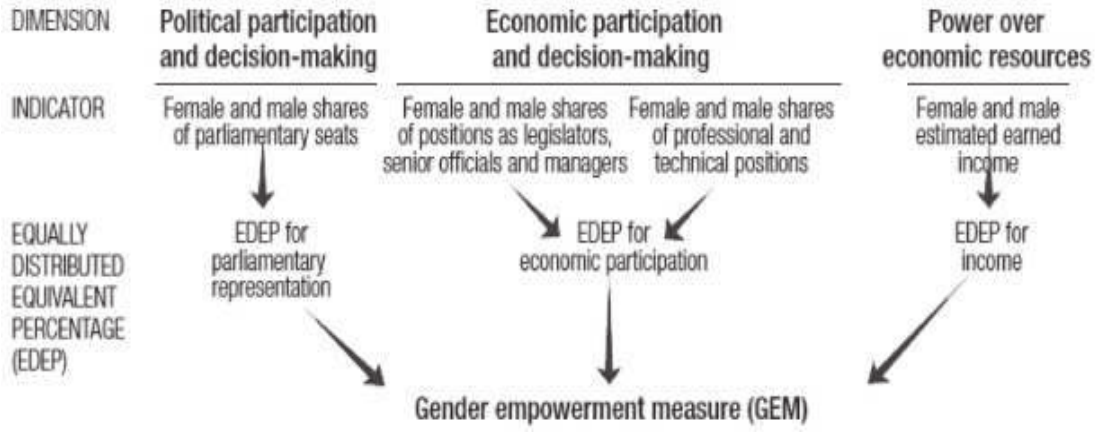
This index is constructed highlighting the three key areas:

(i) Political parti-cipation and decision-making power as measured by the percentage shares of parliamentary seats of both female and male,

(ii) Economic participation and decision-making power, as measured by two indicators—

percentage shares of positions as legislators, senior administrators and managers of both sexes and women's and men's percentages shares in professional and technical positions, and

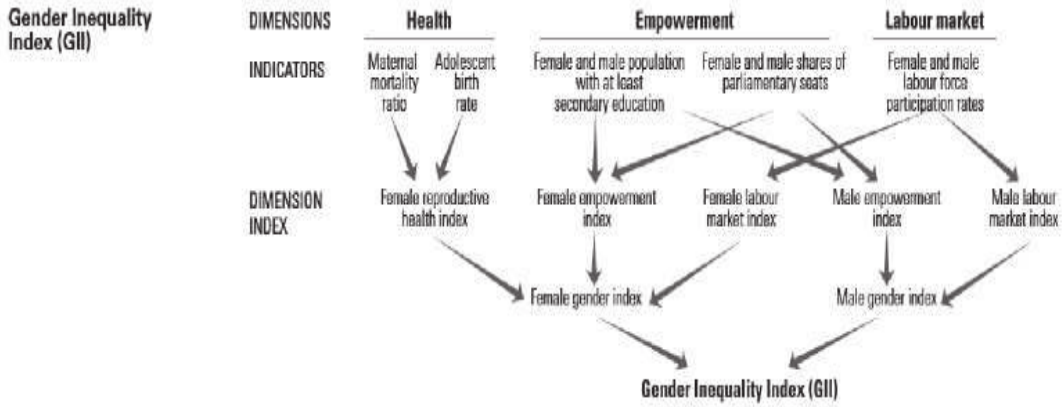
(iii) Power or authority over economic resources, as measured by contributions of earned income of both women and men. GEM is simply the average of these three indices. The essence of GEM has been shown in the following Figure.



Gender inequality remains a major barrier to human development. Girls and women have made major strides since 1990, but they have not yet gained gender equity. The disadvantages facing women and girls are a major source of inequality. All too often, women and girls are discriminated against in health, education, political representation, labour market, etc.—with negative consequences for development of their capabilities and their freedom of choice.

The GII is an inequality index. It measures gender inequalities in three important aspects of human development—reproductive health, measured by maternal mortality ratio and adolescent birth rates; empowerment, measured by proportion of parliamentary seats occupied by females and proportion of adult females and males aged 25 years and older with at least some secondary education; and economic status, expressed as labour market participation and measured by labour force participation rate of female and male populations aged 15 years and older. The GII is built on the same framework as the IHDI—to better expose differences in the distribution of achievements between women and men. It measures the human development costs of gender inequality. Thus the higher the GII value the more disparities between females and males and the more loss to human development.

The GII sheds new light on the position of women in 160 countries; it yields insights in gender gaps in major areas of human development. The component indicators highlight areas in need of critical policy intervention and it stimulates proactive thinking and public policy to overcome systematic disadvantages of women.



2.10 Deprivation Indicies

Deprivation index is usually used in public health study. At the same time, deprivation index can also use to measure the level of deprivation in an area or a village. These indices are also referred as the index of inequalities or disadvantage. In 2010, HPI was supplanted by the UN's Multidimensional Poverty Index (MPI). The index was developed by Oxford Poverty & Human Development Initiative (OPHI) and the United Nations Development Program (UNDP). The MPI constitutes a set of poverty measures which can be used to create a comprehensive picture of people living in poverty. The index offers a valuable complement to traditional income-based poverty measures by considering multiple deprivations at the household level. The index identifies deprivations across the same three dimensions as the HDI with ten indicators; two represent health (malnutrition, and child mortality), two are educational achievements (years of schooling and school enrolment), and six aim to capture standard of living (access to electricity, drinking water, sanitation, flooring, cooking fuel and basic assets like a radio or bicycle). The three broad categories–health, education, and living standards–are weighted equally (one-third each) to form the composite index which shows the number of people who are multidimensional poor (suffering deprivations in 33% of weighted indicators) and the number of deprivations with which poor households typically contend.

The MPI relies on three main databases that are publicly available and comparable for most developing countries: the Demographic and Health Survey (DHS), the Multiple Indicators Cluster Survey (MICS), and the World Health Survey (WHS). The 2013 HDR presents estimates for 104 countries with a combined population of 5.4 billion (76% of the world total). The report highlighted that about 1.6 billion people in the countries covered lived in multidimensional poverty between 2002 and 2011 which is 30% of their entire population (OPHI, 2013). There are some advantages of the MPI compared to the HPI. According to Alkire and Foster (2011), the index is able to capture the severe deprivations that each person faces at the same time and can reflect both the incidence of multidimensional deprivation, and its intensity – how many deprivations people experience at the same time. Thus, this addresses the shortcoming of the HPI which could not identify specific individuals,

households or larger groups of people as jointly deprived as it used country averages to reflect aggregate deprivations in health, education, and standard of living. In addition, the MPI can be broken down by indicator to show how the composition of multidimensional poverty changes for different regions, ethnic groups, urban and rural location, as well as other key household and community characteristics. This is why OPHI describes the MPI as a high resolution lens on poverty as it can be used as an analytical tool to identify the most prevailing deprivations. Besides, the methodology of MPI shows aspects in which the poor are deprived and help to reveal the interconnections among those deprivations. This enables policymakers to target resources and design policies more effectively. This is especially useful where the MPI reveals areas or groups characterized by severe deprivation. However, the MPI also has several drawbacks. First, the indicators included in this index are from different elements because the data are not available for all dimensions. Some indicators are based on outputs (such as years of schooling) and others based on inputs (such as cooking fuel). Second, in order to be considered the multidimensional poor, the MPI stated that households must be deprived in at least six standard of living indicators or in three standard of living indicators and one health or education indicator. However, data availability for all indicators is questionable. Therefore, careful judgments were needed to address missing data in some cases. Third, while the MPI goes well beyond a headcount to include the intensity of poverty experienced, it does not measure inequality among the poor, although decompositions by group can be used to reveal group-based inequalities. Finally, the estimates presented here are based on publicly available data and cover various years between 2000 and 2010, which limits direct cross-country comparability. These drawbacks are mainly due to data constraints. With these drawbacks, it is expected that this index will evolve over time just like the other development indices.

The Multidimensional Poverty Index was launched by the UNDP and the Oxford Poverty & Human Development Initiative (OPHI) in 2010. Basic philosophy and significance of MPI is that it is based on the idea that poverty is not unidimensional (not just depends on income and one individual may lack several basic needs like education, health etc.), rather it is multidimensional. The MPI measures overlapping deprivations at the household level across the same three dimensions as the Human Development Index (health, education and living standards). The index shows the proportion of poor people and the average number of deprivations each poor person experiences at the same time.

The Multidimensional Poverty Index (MPI) identifies multiple deprivations and that is why the index is known as multidimensional. Methodological significance of MPI is that it recognizes poverty from different dimensions compared to the conventional methodology that measures poverty only from the income or monetary terms.

For the estimation of deprivation or poverty from different dimensions, the MPI uses three dimensions and ten indicators. The three dimensions are health, education and standard of living. Deprivations are measured for the household and individual levels. The household data are aggregated to derive the national measure of multidimensional poverty. The three dimensions and ten indicators based on them are:

Education: Years of schooling and child enrolment (1/6 weightage each, total 2/6);

Health: Child mortality and nutrition (1/6 weightage each, total 2/6);

Standard of living: Electricity, flooring, drinking water, sanitation, cooking fuel and assets (1/18 weightage each, total 2/6). Deprivation of one dimension (like education) alone may not represent poverty. Here, the MPI requires a household to be deprived in multiple indicators at the same time. A person is multidimensional poor if she/he is deprived in one third or more (means 33% or more) of the weighted indicators (out of the ten indicators).

Those who are deprived in one half or more of the weighted indicators are considered living in extreme multidimensional poverty.

The MPI identifies overlapping deprivations at the household level across the same three dimensions as the Human Development Index (health, education and living standards) and shows the proportion of poor people and the average number of deprivations each poor person experiences at the same time.

The MPI is a measure of "acute" poverty because it reflects overlapping deprivation in basic needs. If a person is deprived in 20-33.3% of the weighted indicators they are considered 'Vulnerable to Poverty', and if they are deprived in 50% or more, they are identified as being in 'Severe Poverty'. On the other hand, World Bank's measure of "extreme" poverty captures with an income criteria of less than $1.90 (in 2011 $PPP) a day. The MPI methodology shows areas in which the poor are deprived and helps to identify inter-connections among those deprivations. This enables policymakers to target resources and design policies more effectively. The Multi-Dimensional Poverty Index for 2016 was published by OPHI. It includes 102 countries, covering 75 per cent of the world's population, or around 5.2 billion people. According to the estimate, nearly 30 per cent of people (1.6 billion) are identified as multidimensional poor. According to the 2016 Report, India has the highest multidimensional poverty after Afghanistan in South Asia. Nearly 54% of the Indian population is multidimensional poor compared to 66% in Afghanistan. The poorest region in South Asia is Bihar, followed by 'South' Afghanistan. The poorest 15 subnational regions in South Asia are all in India or Afghanistan, plus one region (Baluchistan) of Pakistan. There are more 'Multidimensional poor people (421 mn) in the eight poorest Indian states (Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh, and West Bengal) than in 26 poorest African countries combined (410 mn).

2.11 Uni-dimensional Measure

- *Sen's Index*:

Sen (1976) has proposed an index that sought to combine the effects of the number of poor, the depth of their poverty, and the distribution of poverty within the group. The index is given by

$$P_s = P_0 \{1-(1-G^p)\ \mu^p/z\}$$

Here, P_0 is the headcount index,

μ^p is the mean income (or expenditure) of the poor, and

G^p is the Gini coefficient of inequality among the poor.

In the context of measuring inequality, the Gini coefficient ranges from 0 (perfect equality) to 1 (perfect inequality). The Sen Index can also be written as the average of the headcount and poverty gap measures, weighted by the Gini coefficient of the poor, giving:

$$P_s = P_0 G^p + P_1 (1-G^p)$$

It can be shown that the Sen Index may also be written as

$$P_s = P_0 \, P_1^p \, (1+G^{pp})$$

Where G^{pp} is the Gini coefficient of the poverty gap ratios of only the poor and P_1^p is the poverty gap index calculated over poor individuals only.

The Sen Index has been widely discussed, and has the virtue of taking the income distribution among the poor into account. However the index is almost never used outside of the academic literature, perhaps because it is lacks the intuitive appeal of some of the simpler measures of poverty, but also because it cannot be used to decompose poverty into contributions from different subgroups.

- *FGT Index;*

This measure is proposed by Foster, Greer and Thorbecke (1984), which may be written, quite generally, as

$$P_\alpha = 1/N \sum_{i=1}^{N} (Gi/z)^\alpha$$

Where ($\alpha \geq 0$) is a measure of the sensitivity of the index to poverty and the poverty line is z, the value of expenditure per capita for the i-th person's household is x_i, and the poverty gap for individual i is $G_i = z - x_i$ (with $G_i = 0$ when $x_i > z$) When parameter $\alpha = 0$, P_0 is simply the head-count index. When $\alpha = 1$, the index is the poverty gap index P_1, and when á is set equal to 2, P_2 is the poverty severity index. For all $\alpha > 0$, the measure is strictly decreasing in the living standard of the poor (the lower your standard of living, the poorer one is thought to be). Furthermore, for $\alpha > 1$ it also has the property that the increase in measured poverty due to a fall in one's standard of living will be considered greater the poorer one is. The measure is then said to be strictly convex in incomes (and weakly convex for $\alpha = 1$). Another convenient feature of the FGT class of poverty measures is that they can be disaggregated for population sub-groups and the contribution of each sub-group to national poverty can be calculated.

Although the Foster, Greer and Thorbecke measure provides an elegant unifying framework for measures of poverty, it leaves unanswered the question of what is the best value of α. Moreover some of these measures also lack emotional appeal. The measures of poverty depth and poverty severity provide complementary information on the incidence of poverty. It might be the case that some groups have a high poverty incidence but low poverty gap (when numerous members are just below the poverty line), while other groups have a low

poverty incidence but a high poverty gap for those who are poor (when relatively few members are below the poverty line but with extremely low levels of consumption). The alleviation of poverty is increasingly seen as a fundamental economic objective. Poverty creates many economic costs in terms of the opportunity cost of lost output, the cost of welfare provision, and the private and external costs associated with exclusion from normal economic activity. These costs include the costs of unemployment, crime, and poor health. In addition, the poor have little disposable income, and so cannot spend and generate income for firms and jobs for other individuals.

- *Multidimensional Deprivation:*

Poverty is often defined by one-dimensional measure – usually based on income. But no single indicator can capture the multiple dimensions of poverty. Multidimensional poverty encompasses the various deprivations experienced by poor people in their daily lives – such as poor health, lack of education, inadequate living standards, disempowerment, poor quality of work, the threat of violence, and living in areas that are environmentally hazardous, among others.

A multidimensional measure of poverty can incorporate a range of indicators that capture the complexity of this phenomenon in order to inform policies aimed at reducing poverty and deprivation in a country. Depending on the context of a country and the purpose of the measure, different indicators can be chosen to reflect the needs and priorities of a nation, as well as its constituent regions, districts, provinces, etc.

The multidimensional approach to deprivation is used for the following reasons:

- **Monetary-based poverty measures can miss a lot**. Studies have revealed that the overlap between monetary and non-monetary measures of poverty is not perfect. In most cases, not all individuals who are income poor are multidimensional poor and not all multidimensional poor individuals are income poor. Both monetary and non-monetary measures of poverty are needed to better inform the policies intended to address the needs and deprivations faced by poor populations.
- **Economic growth does not always reduce poverty or deprivation.** Several studies have found that economic grow is not strongly associated with a reduction in other deprivations, such as child malnutrition or child mortality.
- **Poor people describe their experience of poverty as multidimensional**. Participatory exercises reveal that poor people describe ill-being to include poor health, nutrition, lack of adequate sanitation and clean water, social exclusion, low education, bad housing conditions, violence, shame, disempowerment and much more.
- **The more policy-relevant information there is available on poverty, the better-equipped policymakers will be to reduce it.** For example, an area in which most people are deprived in education requires a different poverty reduction strategy from an area in which most people are deprived in housing conditions.
- Some methods for multidimensional measurement, such as the Alkire-Foster method, can be used for additional purposes. Beyond measuring poverty and wellbeing, the Alkire-Foster method can be adapted to target services and conditional cash transfers or to monitor the performance of programmes.

- The Human Poverty Index - HPI

The Human Poverty Index (HPI), which was introduced in 1997, is a composite index which assesses three elements of deprivation in a country — longevity, knowledge and a decent standard of living. There are two indices; the HPI–1, which measures poverty in developing countries, and the HPI-2, which measures poverty in OCED developed economies.

HPI-1 (for developing countries)

The HPI for developing countries has three components:

The first element is longevity, which is defined as the probability of not surviving to the age of 40. The second element is knowledge, which is assessed by looking at the adult literacy rate. The third element is to have a 'decent' standard of living. Failure to achieve this is identified by the percentage of the population not using an improved water source and the percentage of children under-weight for their age. As a region of the world, Sub-Saharan Africa has the highest level of poverty as a proportion of total population, at over 60%. The second poorest region is Latin America, with 35% of its population living in poverty. HPI-2 (for developed - OECD countries). The indicators of deprivation are adjusted for advanced economies in the following ways:

1. Longevity, which for developed countries is considered as the probability at birth of not surviving to the age of 60.
2. Knowledge is assessed in terms of the percentage of adults lacking functional literacy skills, and;
3. A decent standard of living is measured by the percentage of the population living below the poverty line, which is defined as those below 50% of median household disposable income, and social exclusion, which is indicated by the long-term unemployment rate

- Multidimensional Poverty Index (MPI),

The Multidimensional Poverty Index (MPI) identifies multiple deprivations at the household and individual level in health, education and standard of living. It uses micro data from household surveys, and—unlike the Inequality-adjusted Human Development Index—all the indicators needed to construct the measure must come from the same survey. Each person in a given household is classified as poor or non-poor depending on the weighted number of deprivations his or her household, and thus, he or she experiences. These data are then aggregated into the national measure of poverty. The MPI reflects both the incidence of multidimensional deprivation (a headcount of those in multidimensional poverty) and its intensity (the average deprivation score experienced by poor people). It can be used to create a comprehensive picture of people living in poverty, and permits comparisons both across countries, regions and the world and within countries by ethnic group, urban or rural location, as well as other key household and community characteristics. The

MPI offers a valuable complement to income-based poverty measures.

The 2018 Statistical Update presents estimates for 105 developing countries with a combined population of 5.7 billion (77% of the world total). About 1.3 billion people in the countries covered—23.3% of their entire population—lived in multidimensional poverty between 2006 and 2016-17. We could not include other countries due to data constraints. Comparable data on each of the indicators were not available for other developing nations. There was also a decision not to use data from surveys conducted earlier than 2006.

2.12 Conclusion

Evidence shows that only a portion of the growth of output over time can be statistically explained by changes in the quantity of conventional factors of production. The residual growth must be explained largely by changes in the quality of the labour force, that is, by the development of human resources. Empirical work relating to the improved education of labour and to entrepreneurship, only reinforced this now widely accepted proposition. The importance of human resources development for overall economic growth has been further documented by the more recent experience of the so-called newly developed countries, such as those of East Asia. One of the main features of the development of newly developed countries has been the emphasis placed on the development of their human resources.

However, it must be noted that, while all the countries that broke out of underdevelopment have emphasized the development of human resources, it is also true that some countries that succeeded in spreading education among the labour force have not managed to initiate a robust and sustained economic development. This experience has shown that capital investment is a necessary but not sufficient condition for development and that human resources development is also a necessary condition of development, but not a sufficient one.

Another major change in development thinking came as a result of the experience of the industrialized countries themselves, particularly the United States. This experience showed that economic growth could take place together with social ills, such as the maldistribution of income, the persistence of poverty and increasing homelessness, the disintegration of the family, high rates of divorce, environmental pollution and destruction, the spread of violent crime and drug abuse, and the appearance of other social pathologies. In other words, the Gross National Product (GNP) and other measures of economic performance could rise together with the rise of undesirable social trends. This type of economic growth, it was recognized, was neither desirable nor sustainable in the long run.

A number of attempts were made by social scientists during the past forty years to devise more welfare-sensitive measurements or indices of development and deprivation that incorporate other variables than GNP. Major examples are the Unitary Index of the 1960s that combines a large set of social variables in the areas of nutrition, shelter, health, education, leisure, security, and social and physical environment; the Physical Quality of Life Index of the 1970s, that combines infant mortality, life expectancy at birth and adult literacy; the

International Human Suffering Index of the 1980s in which are integrated a large set of variables such as expectation of life at birth, calorie intake, availability of clean drinking water, secondary enrolment, inflation rate, infant immunization and other indicators dealing with civil rights and political freedom; and, finally, the Human Development Index (HDI) of the 1990s. The common feature of all these multi-variable indices of development is that they try to combine a number of indicators, generally proxies for various aspects of economic and social life, into one index of development. The present Health Sector Development Program (HSDP) addresses all health service activities of the central and regional governments from basic services to specialize and referral services. It is expected to bring significant improvement to the entire health system and, in particular, to long-neglected rural areas and to especially vulnerable groups (such as mothers and children) that would benefit from the expansion of health services.

2.13 Key Terms Simplified

Sustainable development: Development can be considered sustainable if it addresses the needs of the present without endangering the capabilities of future generations to meet their own needs. Experts argue that it is impossible to achieve this 'intergenerational' equity without present-day social equity, especially if some economic groups continue to endanger the wellbeing of other segments of the population across the globe. Sustainable development entails relationships among the key components: social, economic, and environmental factors.

The objectives of sustainable development:

- Social objectives: These include education, security, equity, full employment, health, cultural identity, and participation, among others
- Economic objectives: These include growth, stability, and efficiency, among others
- Environmental objectives: These include a healthy environment for human beings, the conservation of non-renewable natural resources, the rational use of renewable natural resources, etc.

Standard of living: An individual's or a socioeconomic class's standard of living is the level of wealth, comfort, material goods, and necessities available to them in a certain geographic area, usually a country.

Poverty: It is the scarcity or the lack of a certain (variant) amount of material possessions or money. Poverty is a multifaceted concept, which may include social, economic, and political elements.

Absolute poverty is poverty that is unrelated to a particular economic or social context. In other words it is a general definition of poverty which is valid at all times and for all economies. Agreeing such a definition is extremely hard to do. One straightforward definition of absolute poverty is '…*being unable to subsist*…' that is, unable to eat, drink, and have shelter and clothing (basic necessities to sustain life). A common universal measure of extreme poverty is receiving less than $1.25 a day. Extreme poverty if defined as not being able to buy

enough food to survive. Absolute poverty refers to a set standard which is consistent over time and between countries. An example of an absolute measurement would be the percentage of the population eating less food than is required to sustain the human body (approximately 2000–2500 calories per day). In India the standard measure is 2400 calories per day for rural areas and 2100 calories per day for urban areas.

Relative poverty: It can be argued that poverty is best understood in a relative way – what is poor in New York is not the same as in Mumbai. One approach is to look at 'deprivation', the poor being defined as those who are deprived from the benefits of a modern economy, such as clean water and education.

Adult literacy: The percentage of those aged 15 and above who are able to read and write a simple statement on their everyday life.

GDP per capita: GDP per capita is the commonest indicator of material standards of living, and hence is included in the index of development. GDP per capita. It is calculated by measuring Gross Domestic Product in a year, and dividing it by the population.

Poverty Gap Index: is the mean distance below the poverty line as a proportion of the poverty line where the mean is taken over the whole population, counting the non-poor as having zero poverty gap.

Physical Quality of Life Index (PQLI): It is an attempt to measure the quality of life or well-being of a country. The value is the average of three statistics: basic literacy rate, infant mortality, and life expectancy at age one, all equally weighted on a 0 to 100 scale.

2.14 Questions with Answer Hints

Questions Carrying 2.5 marks

1. Define Social development?
   [Answer: See second paragraph of section 2.3]
2. What do you mean by economic development?
   [Answer: See second paragraph of section 2.4]
3. What do you mean by deprivation?
   [Answer: See fourth paragraph of section 2.4]
4. Define HDI.
   [Answer: See second paragraph of Section 2.5]
5. What are the main features of HDI?
   [Answer: See second paragraph of Section 2.6]
6. What are the five elements of women's empowerment?
   [Answer: See second paragraph of Section 2.9]

Questions Carrying 5 marks

1. State the merits of HDI as a measure of development.

[Answer: See fifth paragraph of Section 2.6]

2. What are the disadvantages of HDI as a measure of development?
   [Answer: See sixth paragraph of Section 2.6]
3. What do you mean by IHDI?
   [Answer: See second paragraph of Section 2.7]
4. What do you mean by GDI?
   [Answer: See first paragraph of Section 2.8]
5. What do you mean by GEM?
   [Answer: See first paragraph of Section 2.9]
6. What do you mean by MPI?
   [Answer: See last paragraph of Section 2.10]
7. State the difference between HPI1 and HPI2
   [Answer: See third paragraph of Section 2.11]

Questions Carrying 10 marks

1. Elaborate how economic development is related to the concept of deprivation.
   [Answer: See Section 2.4]
2. Write a short note on HDI as a development Index.
   [Answer: See Section 2.6]
3. Compare the GII and GEM as measurement of development.
   [Answer: See Section 2.9]
4. Write a short note on deprivation indices.
   [Answer: See Section 2.10]
5. Make a comparative study of the unidimensional measures of poverty.
   [Answer: See Section 2.11]

2.15 References

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UNIT 3 ■ Economics of Education

Structure

3.1 Objectives

After reading this unit, you will be able to:

- know the importance of education as an instrument for economic growth;
- understand the demand for education;
- distinguish between private demand and social demand;
- understand the direct and indirect benefits of education;
- know the effects of education on poverty and income distribution and employment;
- have an idea of the policies on education in India since Independence.

3.2 Introduction

Kautilya, a philosopher and royal adviser in Ancient India, long back, some 2000 years ago, underlined the importance of education by stating that education enriches people's understanding of themselves. Education wipes out the wrong beliefs from minds and helps

create a clear picture of things around. Further, it kindles the flame of curiosity and helps awaken the abilities to question, and to reason. It teaches us to find answers and makes us more self-aware. A direct effect of education is knowledge gained. Education makes us capable of interpreting things appropriately and applying the gathered information in real-life scenarios. Thus, education is an investment in human capital, and it can have a great impact on a nation's growth and development**.** It lays the foundation of a stronger nation.

Economics of education is the study of economic issues relating to education, including the demand for education, the financing and provision of education, and the comparative efficiency of various educational programs and policies. From early works on the relationship between schooling and labour market outcomes for individuals, the field of the economics of education has grown rapidly to cover virtually all areas with linkages to education

Economics of Education as an area of study cannot be said to be a separate field of inquiry that is totally separate from the mainstream economics. Economics of Education is the application of economic principles, concepts, and laws to the process of Education. Economics of education studies human behaviour (in terms of human decisions), action(s) and reaction(s)) about schooling. It further looks into how human behaviour affects economic development. Economics of education is one of the branches of ordinary economics, though, it is the study of how educational managers make official or approved choices from scarce available resources which is meant for the realisation of the best possible educational outcomes. Economics of Education employs the use of certain elementary concepts commonly used in labour economics, public sector economics, welfare economics, growth theory and development economics. World renowned classical economists, like Adam Smith, Alfred Marshall, and John Stuart Mill have had discussed the linkages between education and development extensively, advocating for public investment in education. So, by the 1950s, economists gave attention to issues such as the relationship between education and economic growth; relationship between education and income distribution and also the financing of education.

Economists analyze the production of education in this world where resources such as the capital invested in buildings or technology and the labour of the teacher workforce are necessarily scarce. This scarcity of resources means policymakers must decide:

- How much to spend on each stage of education (i.e. what to produce);
- How to provide educational services in a way that maximises its benefits to society (i.e. how to produce education); and
- Who should have access to each stage of education (i.e. for whom education is provided).

There are three major decision makers or stakeholders in the educational system. These are

(1) The society

(2) The institutions or providers (suppliers) of education and

(3) Individual or households (purchasers of educational services).

The twin problem - of scarcity and choice - confronts these three major stakeholders. The fundamental problem of economics of education is how the society, institution and the households make use of the limited human and material resources that they have in their disposal to best satisfy their ever-increasing wants for education.

3.3 Educations as an Instrument for Economic Growth

Till recently economists have been considering physical capital as the most important factor determining economic growth and have been recommending that rate of physical capital formation in developing countries must be increased to accelerate the process of economic growth and raise the living standards of the people. But in the last three decades researches in economic have revealed the importance of education as a crucial factor in economic development. Education refers to the development of human skills and knowledge of the people or labour force. It is not only the quantitative expansion of educational opportunities but also the qualitative improvement of the type of education which is imparted to the labour force that holds the key to economic development. Because of its significant contribution to economic development, education has been called as human capital and expenditure on education of the people as investment in man or human capital. Clearly, a country which is unable to develop the skills and knowledge of its people and to utilise them effectively in the national economy will be unable to develop anything else.

Education and Economic Growth :

Several empirical studies made in developed countries, especially the U.S.A. regarding the sources of growth or, in other words, contributions made by various factors such as physical capital, human- hours, (i.e., physical labour), education etc. have shown that education or the development of human capital is a significant source of economic growth.

Professor Solow, who was one of the first economists to measure the contribution of human capital to economic growth, estimated that for United States between 1909 and 1949, 57.5 per cent of the growth in output per man hour could be attributed to the residual factor which represents the effect of the technological change and of the improvement in the quality of labour mainly as a consequence of education. He estimated this residual factor determining the increase in the total output on account of the measurable inputs of capital and labour (man-hours). He then subtracted this figure from the total output to get the contribution of residual factor which represented the effect of education and technological change, the physically immeasurable factors. Denison, another American economist made further refinement in estimating the contribution to economic growth of various factors. Denison tried to separate and measure the contributions of various elements of 'residual factor'. According to the estimates of Denison that over the period 1929-82 in the USA during which total national output grew at the rate of 2.9 per cent per annum, increase in labour input accounted for 32 per cent, the remaining 68 per cent was due to the increase in productivity per worker. He then measured the contributions of education of per worker, capital formation, technological change and economies of scale. Denison found that 28 per cent points of contribution to growth in output due to growth in labour-productivity was due to technological change, 19 per cent

points due to capital formation and 14 per cent points due to education per workers, and 9 per cent points due to economies of scale. It is thus clear that education and techno-logical progress together made 42 per cent (14 + 28) contribution to growth in national product.

Rate of Return Approach:

The contribution of education to economic growth has also been measured through the rate of return approach. In this approach rate of return is calculated from expenditure made by individuals on education and the measurement of the flow of an individual's future earnings expected to result from education. The present value of these is then calculated by using appropriate discount rate.

Expenditure on Education and Income:

Another approach to measure the contribution of education is based upon the analysis of the relationship between expenditure on education and income. Using this approach Schultz studied the relationship between expenditure on education and consumer's income and also the relationship between expenditure on education and physical capital formation for the United States during the period 1900 to 1956. He found that when measured in constant dollars, the resources allocated to education rose about three and a half times (a) relative to consumer income in dollars, (b) relative to the gross formation of physical capital in dollars. This implies that the income elasticity of the demand for education was about 3.5 over the period or, in other words, education considered as an investment could be regarded as 3.5 times more attractive than investment in physical capital. It may, however, be noted that these estimates of Schultz only indirectly reflect the contribution of education to economic growth. The above analysis explains that education is regarded as investment and like in-vestment in physical capital; it raises productivity of the labour and thus contributes to growth of national income. The increased earnings or higher wages made by more educated workers have been considered as benefits not only to the private individuals, but also to the society as a whole. This is because higher earnings presumably reflect higher productivity, increased output in real as well as monetary terms.

3.4 Demand for Education — Private Demand and Social Demand

Demand for education means the total number of persons actually enrolled in the educational system. The potential demand for education may be defined as the total number of individuals who are willing to pay for their education. Demand for education can be classified in to two types. They are: i) Individual demand or private demand. ii) Social demand.

There are three kinds of private demand for education. They are :

Satisfied Demand for Education: when an individual enrolls in a school and stays for throughout his course time with more probability of completing the course.

Unsatisfied Demand for Education: it is the situation while an individual not at all enrolled in a school, during his voluntary school-age period. Here the individual's demand for education is said to be an unsatisfied demand.

Partially Satisfied Demand for Education: This may be viewed as the case, where an individual enrolled in a school after some days or months might have dropped out from the school, due to any family problem. Therefore, we can call this demand as the partially satisfied demand for education.

The concept of demand for education can be compared with that of the text book definition of demand. At a given price level, the quantity of commodity demanded by an individual is backed by the purchasing power. Similarly, in the context of education the ability to pay for the school expenses (i.e., the direct and indirect costs of education) depends on the purchasing power. Therefore the purchasing power for education can be decided by student's family income. The equilibrium condition for investing in education is that the marginal cost of education must be equal to the marginal benefit obtained from education. The marginal concepts explain regarding the last unit of money that was spent on education and the last unit of rewards received from education. In the following section we discuss the determinants of the demand for education from the individual as well as society point of view

The social demand for education on the other hand, is the total number of persons enrolled in an educational system. It can be calculated from horizontal summation of individual or private demand for education.

***Determinants of Demand for Education*:**

There are several factors which influence the demand for education. They are as follows:

Individual factors:

- As far as an individual is concerned he/she will invest in education so long as the present value of the expected stream of benefits arising from education exceeds or equals the present cost of education. This is known as the rate of return criterion.
- The demand for education can also be considered as a functional relationship between the willingness to purchase education and the price of education. Here the term willingness refers to the preference towards education. In short individual's perception about education plays a vital role in deciding his demand for education.
- One may argue that, even if the individual has willingness to obtain education, if his family background does not allow him to do so, then his demand will be unsatisfied.
- Further, more often an individual chooses to invest in an additional period of full time education if the expected net benefits of doing so are positive. This implies that in deciding the individual demand for education the future benefits rather than the present benefits play a crucial role.
- Individuals demand education by investing their current time and money for future pay. We can think of a trade-off between the present consumption and future consumption. The occupational motive factors play a predominant role in individual's demand for education.
- Individual's childhood ambition or aim influences the demand for education.
- The equilibrium condition for the case of individual demand for education would be the equality between the marginal interest rates and the marginal rate of

returns. The marginal interest rate is that rate of interest rate prevailing in the market for educational funds. An individual's demand curve for education can be drawn by using the marginal rate of return on investment in education. It is drawn downward sloping with the assumption that beyond a certain point additional investments would yield a lower return.

- The sex of the individual plays an important role in determining the demand for education. There is a general opinion that if the person is a boy, parents would educate him well than in the case of a girl of family.

Role of parents and family:

- Primarily the family income decides the demand for education of their children. The parent's ability to pay for their children's school fees would decide the demand for education of their children.
- Parental educational levels influence the demand for education of their children. One can expect a direct relationship between the parent's education and their children's demand for education.
- Educo-genic factors decide the demand for education of their children among families.
- The family size factor also plays a crucial role in the educational attainment of children. That is families with less number of children get more opportunities for education than those families with more number of children. Thus the demand for education would be decided by the family size.
- Variables like demand for child labour, urban living standards and the role of child in the economic well being of the family would influence the demand for education of children.
- Hence, we infer that the family factors are the major influences in deciding the demand for education of children.

We can expect a favourable demand for education, if the family has the following characteristics:

Well planned family.

- Family with parents and eiders who are highly educated.
- Family with reasonable economic status.
- Family with respectable occupation.

Social Context:

The social status and demand for education are positively related. As far as the society is concerned demand for education depends on good social status, social mobility and social prestige. Among the social factors, variables such as community, religion and the social value attached to education play a crucial role in determining the educational attainment of the members. Studies have shown that the inequality of educational distribution persists

among various socio-economic strata. Demand for education can also be determined by the conveyance facilities available for going to educational institutions in that particular area of the society. Hence the transportation facilities should be considered in deciding the demand for education of individuals.

School factors:

There are several important school factors that determine the demand for education. These are

- The distance from home to school.
- Availability of schools (especially in rural areas).
- Medium of instruction.
- School fees.
- Infrastructure facilities available at schools.
- Subjects offered for the students.

3.5 Benefits of Education — Direct and Indirect Benefits

Consumption Benefits of Education:

Education also yields consumption benefits for the individual as he may enjoy more education derive increased satisfaction from his present and future personal life. If the welfare of society depends on the welfare of its individual members, then the society as a whole also gains in welfare as a result of the increased consumption benefits of individuals from more education. Economic theory also helps us in quantifying the consumption benefits derived from education. In economic theory, to measure the marginal value of a product or service to a consumer we consider how much he has paid for it. An individual would not have purchased a product or service if it were not worth its price to him. Besides, an individual would have bought more units of a product if he thought that the marginal utility he was getting was more than the price he was paying. Thus, relative prices of various products reflect the marginal values of different products and the amount consumed of various products multiplied by their prices would, therefore, indicate the consumption benefits derived by the individuals. It may, however, be pointed out that the prices in a free economy are influenced by a given income distribution and the presence of monopolies and imperfections in the market structure and therefore they do not reflect the true marginal social values of different goods. However, an objective measure of consumption benefits of education may be difficult and has yet to be found out, but it should not lead any one to ignore the consumption benefits of education and its policy relevance. It may also be noted that, according to the new view, economic development is not merely concerned with the growth of output but also with the increase in consumption and well-being of the society. Therefore, consumption benefits of education may also be regarded as developmental benefits.

External Benefits of Education:

We have explained above the investment benefits and consumption benefits flowing from more education both for the individual and for society. The analysis of benefits has been based on the assumption that private interests of individuals are consistent with the social good.

However, private and social benefits do not always coincide, for instance, social benefits may exceed private benefits. This is the case with the education of an individual which not only benefits individual privately but also others. First, education makes people better neighbours and citizens and makes social and po-litical life more healthy and meaningful. Secondly, the most important external benefit of more education is its effect on technological change in the economy. More education, especially higher education stimulates research and thereby raises productivity which undoubtedly benefits the society.

Education externalities are the public benefits of education that spill-over to benefit others in the society, including others in future generations. External benefits are distinguished from the private market benefits to earnings and from the private non-market benefits beyond earnings to health, longevity, and the quality of life. Education externalities can be either positive or negative. But with a few minor exceptions the evidence is that they are overwhelmingly positive. The external benefits of education include education's direct benefits to the development of civic institutions that contribute slowly over long periods of time to the rule of law, democracy, human rights, and political stability. Externalities also include direct benefits to longevity, reduced poverty, lower crime rates, lower public welfare and prison costs, environmental sustainability, contributions to happiness and social capital, and effects from the dissemination and capacities to use new R&D.

External benefits of education also include the indirect effects of education that are over and above these direct benefits. Indirect effects operate through other variables and feed back over time to increase the private market and non-market benefits. Examples include the contribution of education to better governance, political stability, and trade that increase growth. The indirect effects improve the conditions under which productivity increases and set the stage for each new round of growth in the future, benefiting others and future generations. It follows that the benefits enjoyed today are increased by external benefits from prior generations. A dynamic process is involved, and its analysis provides a basis for their measurement. External benefits today continually set the stage for further growth within families and within nations.

The direct market benefits that result are illustrated Figure 1, panel A-1, below. The indirect effects illustrated in panel B-1 that feed back later through education's effects on trade openness, political stability, or longevity are eliminated through these controls and are not included in most studies. However, through use of difference equations that incorporate lagged effects it is possible to measure the feedback effects later on per capita growth over time.

The private non-market benefits of education are private benefits to the student and his or her family as shown in panel A-2 in Figure 1. They are not external benefits but instead private benefits to own-health, spousal health, longevity, lower infant mortality, child health, child

education, child cognitive development, lower fertility leading to smaller families, and happiness or well being. The value of each of these non-market private education benefits can be valued and their value is just as legitimate as estimates of the value of the earnings benefits. The methods are explained later.. Some of these private non-market benefits also are indirect. They appear in panel B-2 of Figure 1. For example, education contributes to own-health which in turn contributes indirectly to child education and health (panel B-2).

Figure -1

A-1 Market Benefits to Earnings and Growth *Direct Effects*	B-1. Indirect Effects on Earnings and Growth *Indirect Effects*
A-2. Private Non-Market Benefits *DirectEffects*	B-2. Indirect Effects on Non- Market Private Benefits *Indirect Effects*
A-3. Non-Market Social Benefits (Public Goods) *Direct Effects*	B-3. Indirect Effects on Non-Market SocialBenefits *Indirect Effects*

3.6 Effects of Education on Poverty and Income Distribution

Education, Inequality and Poverty :

An evaluation of the role of education in economic development must not be confined to judging its impact on growth in output but should also include its impact on structure and pattern of economic development as well as on the distribution of income and removal of poverty. In the 1950s and 1960s, the most important objective of development was the maximization of rate of economic growth, i.e. growth of material output and in conformity with this the economics of education also focused on estimating the contribution of education to the growth of national output. But now-a- days policy of economic development has been increasingly concerned with the distribution of income i.e. how gains of economic growth are distributed and whether poverty is being reduced.

But recent studies have revealed that education, given the present education system, has tended to increase the inequalities in income distribution rather than reducing them. The adverse effect of formal education on income distribution has been explained through establishing a positive correla-tion between level of education received by an individual and the level of his life-term earnings. It has been shown that those who are able to complete their secondary and university education earn as high as 300 to 800 percentages more income in their life time than those who complete a part or whole of their primary education.

Since levels of earned income are so clearly dependent on years of completed schooling, it follows that large income inequalities will be reinforced and the magni-tude of poverty perpetuated if students from middle and upper income brackets are represented disproportionately in secondary and university enrolments. If for financial and/or other reasons

the poor are effectively denied access to secondary and higher education opportunities, then the educa-tional system can actually perpetuate and even increase inequality in Third World Nations. There are two important economic reasons why in the present education system, children and boys belonging to the poor families cannot complete their education up to the secondary level and in many cases even up to the primary level.

First, the private costs especially, the opportunity costs of primary education for the children belonging to the poor families are higher than for students belonging to the rich families. Children of the poor families are needed to do work on their family farms or in other family occupations, that is, cost of studying in school is family work sacrificed. On the other hand, benefits of education to the poor students are also lower as compared to those to the rich students. This is because it is difficult for the poor students to be selected for the jobs because of poor contacts and influences as compared to rich students, even though they may possess the same level of education.

Even in agriculture where it can be said that more education can benefit all equally because it raises the labour productivity, the more benefits of education and consequently of higher productivity in agriculture are likely to be obtained by those who own land and have adequate resources to modernise their agriculture. The benefits of more education and consequently higher productivity of landless labour may go to the landlords for whom they work. It follows from above that as a result of higher private costs and lower expected benefits from education of the poor students, the poor family's rate of return from investment in education of a child is much lower. As a result of this, the children of poor families are likely to 'drop out' during the course of primary education. The fact that children and boys of poor family are unable to complete their secondary education coupled with the fact that there are large income or wage differ-entials between different persons of different levels of education explain that education in underde-veloped economies tends to increase income inequalities and perpetuates poverty rather than helps to reduce them.

3.7 Effects of Education on Employment

Education and Rural Development:

If the objective of raising the standards of living of the people in general and removal of mass poverty is to be attained in less developed countries like India, then rural development must get the highest priority. In the 1950's and 1960's in most of developing countries, the modernization and development of the urban sector was given the highest priority in the development plans and more resources were allocated to this sector. But in recent years the thinking among economists all over the world has undergone a significant change, since the development of the large scale industries and the urban sector has failed to solve the twin problems of poverty and unemployment. It has now been increasingly realised that it is through the emphasis on agricultural and rural development in the strategy of development that the problems of poverty and unemployment can be solved. Since 80 per cent of the population of less developed countries directly or indirectly depends upon agriculture, rural area needs to be given the highest priority.

Now, education can play an important role in agricultural and rural development provided it is suitably modified and gives a rural bias. The present system of education has a strong urban bias so that it is ill-suited to the requirements of agricultural and rural development. A relevant and meaningful education can raise the productivity of the rural labour in agricul-tural work. It can create new employment opportunities if during the schooling students are educated and trained in some useful vocations. Moreover, education to the poor people will induce in them desire to have fewer children with the result that not only their private level of living will rise, but it will also help the general economic development by checking the growth of population. Above all, education will bring about improvement in their health and nutrition.

Different types of education that could be provided to the rural people so as to promote rapid rural and agricultural development are :

1. *General or Basic Education:*

   This should cover teaching the students about reading, writing, elementary mathematics and about understanding of basic science and one's environment. This type of education is being currently provided.

2. *Family Improvement Education:*

   Under this students should be provided knowledge, skills, attitudes which are useful in improving the quality of human life. Accordingly, this should cover subjects such as health and nutrition, family planning, child care, home repairs and environment improvements etc.

3. *Community Development Education*:

   This type of education should be so designed as to improve the working of rural institutions and processes so that rural community should be developed. This should cover subjects such as local self-government, co-operative enterprise, running rural development projects etc.

4. *Occupational Education*:

   Under this students should be educated and trained for performing various agricultural activities properly and efficiently and for imparting education regarding particu-lar agricultural skills and occupations. This would enable the students to make their living through self-employed occupations in agriculture, agro-industries and other non-agricultural works after completing their education.

One of the basic advantages of education is that it protects against unemployment. In essence, the higher the level of education, the more likely one is to find work. The linkage between education level and employment is one of the most debatable topics in the study of labour economics. Since education is the means of providing a skilled workforce, it is necessary for the overall development of the economy. A well-educated and highly skilled workforce is important for ensuring high economic growth and quality of life.

There are two competing economic theories to explain the empirically observed relationship, namely, the Human Capital theory and the Signalling theory. The Human

Capital theory is the most referenced theory related to education and employment. As human beings, we all have potential to acquire knowledge and learn new things throughout our lives. This knowledge can be innate or acquired depending on whether the knowledge has been present since birth or is been learned through experience respectively. The Human Capital theory argues that education imparts skills that serve to increases the productivity of an individual. The more productive individuals are able to generate a higher output which naturally translates into higher wages and better employment opportunities. In contrast, the Signalling theory argues that education does not enhance human capital in any way; instead it merely reflects the existing human capital. Therefore, according to the signalling theory the potential employees would opt to send signal about their ability level by acquiring better educational credentials. While the education by itself may not enhance the productivity or skill of an individual, it conveys an informational value to the prospective employers about the ability of the individual. If the role of education is merely limited to signal the ability of an individual and not to enhance his productivity, education can be considered inefficient form of signalling. Particularly since education is expensive in terms of time and effort. Both theories imply a positive correlation between the level of education and earnings; however, it is fundamentally difficult to establish whether education has a casual relation with earnings. Comparing the benefits of higher education among the privately employed and self-employed individuals, studies found that the benefits were higher for privately employed individuals as compared to the self-employed individuals. This is consistent with signalling theory as the education level did not increase the productivity of self-employed individuals, but served as an effective signal to prospective employers resulting in more lucrative employment opportunities. Another economic rationale of the Signaling theory is given by the sheepskin effect. The Human capital theory suggests that the number of years of education should be more important than acquiring the degree itself. However, the empirical evidence suggests that obtaining the degree has economically significant effect on the earnings of the individual. Further studies have found that certificate completion were associated with economic returns even after controlling for the years of education. Economist argue that rapid completion of degree signals greater ability while spending significant duration without obtaining a degree signals lack of ability and therefore does not contribute towards future earnings. These studies tend to support the Signalling theory. The sorting hypothesis suggests that education drives employment and earnings by reflecting the productivity related characteristics of the workers. It provides a more general explanation of the causal linkage between the education and employment than the Signaling hypothesis. In fact, the Sorting hypothesis encompasses both the Signaling and the Screening Hypothesis. Therefore, according to the Signaling hypothesis, the workers are informed about their own abilities and act first to inform the employers. Under the Screening hypothesis, the employers demand certain minimum level of education from their prospective employees. Therefore, the employers act first and use the information about the education level to screen the potential employees and infer their ability related characteristics. Both the explanations are closely related. Screening on the basis of an individual's educational attainment can only be effective if educational attainment has some signaling power. Similarly, employees can signal about their potential abilities through educational credentials only if the employers consider educational credentials as a valid tool to screen their potential employees.

3.8 Policy on Education in India Since Independence

Issues in the Indian Education System:

The emerging issues in the Indian education system have been stated as follows:

Teaching attribute is in a low state – In most of the educational institutions and training centers within the country, the quality of teaching is not in a very developed state. The main factors that lead to the deprived teaching methods are, shortage of teachers, the curriculum and the instructional methods are not well developed, the teaching-learning methods are not well organized, lack of appropriate communication between the teachers and the students, lack of modern and innovative techniques and financial problems.

Financial constraints – There are many students who belong to minority groups, marginalized and socio-economically backward sections of the society. They show interest in their education, are diligent and aspire to become professionals such as, doctors, lawyers, engineers, business administrators, teachers and so forth. But low income of their families and financial constraints serve to be impediments within the course of the acquisition of education. Students usually migrate to urban areas to get enrolled in higher educational institutions and besides, tuition, they have to pay for their living, food, books, e-resources, and other expenses Traditional teaching methods – In educational institutions, traditional methods of teaching are adopted, and teachers do not make use of technology or audio-visual aids in teaching, particularly in nursery schools. There is requirement for technology and internet within the education system, particularly in rural areas. The investment made in the technological infrastructure will contribute in facilitating learning amongst the rural masses. The testing and the evaluation systems need to be made more creative by recognizing the significance of technology, adopting innovative teaching-learning methods, and ways to solve the problems in an efficient manner.

Privatization - Privatization of higher education is actually a new but a wanted trend and is indispensable to sustain resourcefulness, adaptableness and superiority. The economic track of liberalization and globalization demands for it. In India, both the public and the private institutions function simultaneously. Almost 50 percent of the higher education in India is imparted through private institutions, primarily unassisted comprising of high cost. However, the condition is not considered to be very unassuming. Private providers, in the interest of maximizing profit, have every motivation to minimize the costs by negotiating on the quality of education available in their institutions.

Inadequate facilities and infrastructure – Educational institutions and training centers in India in some cases do not have adequate facilities and infrastructure. In the provision of education, it is vital that there should be availability of proper furniture, technology, machines, cooling and heating equipment in accordance to the weather conditions, clean restrooms and so forth. These are regarded to be important in the provision of education, as the physical environmental conditions of the educational institutions should be comfortable. The facilities and the infrastructure are mainly found to be in an underdeveloped state in schools in rural areas. Moreover, problems of teacher absenteeism and under qualified teachers further

accentuate the crisis. The impact of these factors results in decline in the enrolment of students.

Reward creativity, original thinking, research and innovation – The system of Indian education system in its present form does not have ample scope of rewarding creativity and original thinking. At all the levels of education, it is vital that creativity, logical and rational thinking, research and utilization of innovative techniques and methods should be encouraged. These will contribute in making learning pleasurable. There are students, who do not take interest in learning or attending classes, these results in an increase in the rate of absenteeism. Therefore, in the teaching-learning methods, the teachers and the instructors are required to be imaginative, so that they can make the lesson plans interesting for the students. It is vital for the students to learn the research techniques, as these are imperative in higher education.

Challenges in the Indian Education System

The challenges that the Indian education system are experiencing in the present existence have been stated as follows:

Heterogeneous Education System – The education system within the country is of heterogeneous nature. The main factors that lead to the heterogeneous nature of the education system are based on geographical locations, caste, race and ethnic origins of the individuals, rural and the urban establishments and differences in the backgrounds of the individuals. Involvement of Political Factors – Most of the institutions, when they are imparting education, are owned by dominant political leaders. The political leaders in the present existence are contributing the main role in governing of the educational institutions.

Economic Difficulties – Economic difficulties are regarded to be the most imperative transformations that the system of higher education has imposed upon the communities. There are students enrolled in educational institutions, which belong to minority groups and find it difficult to meet their basic requirements.

Lack of Moral Values – In the present world, the growth of science and technology, innovative methods, modernization and industrialization has minimized the moral values

Indian education system since independence

On August 15, 1947 India attained independence from the British domination. This gave the people of the country the first fullest opportunity to mould their educational policy according to the needs of the nation in the fast changing times. But this opportunity was not free from heavy responsibilities that lay ahead for reorienting the entire system of education, which apart from enabling the coming generations to develop their natural faculties may also enable them to rebuild a new India. The content of learning, which from the very beginning of the British era had been mainly of a general and theoretical nature, had to be given a practical basis. The country needed a large number of technicians, engineers, doctors, scientists and other skilled workers who could impart a new shape to various things in the developing economy of the country, which had been languishing under colonial exploitation for about two centuries. The most important problems in the field of education before the national government were the expansion of facilities for mass compulsory elementary

education, reform of the secondary and university educational systems, to develop vocational and technical education at various levels, to encourage women education and also to reorganize the structure of educational administration. With a view to fulfill all these objectives, the Central and State Governments endeavoured to give a concrete shape to various programmes under the Five-year Plan. The major strides under the five year plans are summarized below:

Five-Year Plan	**Major strides in the area of higher education**
First FYP(1951-1956)	UGC was set up in 1953 for proper funding, development and quality maintenance in higher education Five Indian Institutes of Technology (IITs) were started as major technical institutions.
Second FYP (1956-1961)	With an overall shift in focus from agriculture to manufacturing, more stress was laid on setting up of technical andprofessional institutes to produce skilled manpower The Tata Institute of Fundamental Research was established as a research institute Eleven Rural Institutes were established to educate the rural youth
Third FYP(1961-1966)	Rapid increase in the number of universities and colleges led to deterioration of quality. Thus UGC tried to introduce reforms in the institutions through improvement in the teacher-pupil ratio, introduction of post-graduate courses,improvements in libraries, laboratories and other infrastructuresLarger facilities were provided for diverting students to vocational and technological education
Fourth FYP (1969-1974)	Main emphasis was on consolidation and improvement of higher education through the strengthening of staff and library and laboratory y facilities.Affiliated colleges which provide education to more than 88 per cent of the university students were helped.Assistance for fuller development given to a few colleges selected on the basis of their achievements, existing facilities and potentialities.
Fifth FYP (1974-1978)	Fostering equity by providing additional facilities to weaker sections of society and the backward areasExpansion of facilities through evening colleges and correspondence coursesStrengthening post-graduate and research by developing centers of advanced studyIntroduction of programmes of faculty development, like summer institutes, seminars and orientation programmes.
Sixth FYP (1980-1985)	Low emphasis on expansionGreater priority to improvement of quality of higher educationRegulation of admissionStress on equity by assisting the disadvantaged groupsRestructuring of courses for practical orientation and greater relevance

Seventh FYP (1985-90)	More stress on speedy implementation of various reforms already initiatedIndira Gandhi National Open University (IGNOU) was establishedEmphasis on quality and equity
Eighth FYP (1992-97)	After a period (1989-91) of political instability, this plan highlighted several weaknesses such as substandard institutions, outdated curriculum, lack of researchFocus on integrated and cost-efficient higher education without compromising excellence and equityAn information and library network “INFLIBNET” was proposed.
Ninth FYP (1997-2002)	Focused on the deterioration of quality, the resource crunch and the problems of governance in higher educationStress on enhancing access and equityTarget to grant autonomous status to 10% of eligible colleges
Tenth FYP (2002-2007)	Target to raise the enrolment in higher education of the 18-23 year age group from the present 6 per cent to 10 per cent by the end of the Plan period through strategies of increasing access, quality, adoption of state-specific strategies and the liberalization of the higher education system Emphasis on relevance of the curriculum, vocationalization, and networking on the use of information technology
Eleventh FYP(2007-2012)	As a wake-up call to prolonged neglect of higher education, the GoI set targets for massive expansion also inclusion and rapid movement in quality by enhancing public spending, encouraging private initiatives and initiating the long overdue major institutional and policy reforms Improve quality by working on a detailed reforms agenda including: a) admission, curriculum and assessment; b)accreditation & ratings; c) teachers competence and motivation; and d) restructure affiliated colleges and research for policy formulation.Establish 30 new Central Universities, 16 in States where they do not exist and 14 as World Class Universities, 8 new IITs, 7 new IIMs, 10 new NITs, 3 IISERs (Indian Institutes of Science, Education and Research), 20 IIITs and 2 new SPAs (School of Planning and Architecture)
Twelfth FYP (2012-2014)	Planning Commission has been abolished in 2014 to usher in the NITI AAYOG Plans for inclusive expansion brought in under the RUSA (Rashtriya Uchchatar Shiksha Abhiyan) which would include up gradation of autonomous and A rated colleges into universities, increasing the intake capacity of existing higher education institutions, encouraging existing universities to start undergraduate programmers or integrated UG-PG programme; and creation of small, affiliating College Cluster Universities at the regional levelOther step would be to promote equal access to quality

Administration of Education Since 1947, Education Department in the Center has developed in a full-fledged Ministry under the Central Government. The education at the State level is primarily the responsibility of the State Governments; the Union Government is concerned only with the coordination and determination of academic standards in respect of higher education, research and scientific and technical education. The problem of standards and co-ordination in the sphere of higher education is now the responsibility of the University Grants Commission. Co-ordination in regard to primary and secondary education is secured through All-India Councils. The Union Government is also managing Central Universities of Delhi, Aligarh, Banaras and Shantiniketan and other such institutions of national importance as may be decided by the Parliament of the country. The Central Advisory Board of Education lays down the general educational policy. The Board has four Standing Committees dealing with the primary, secondary, university and social education. These Standing Committees formulate aims and objectives, assess present position and draw up future plans of development in their respective fields.

In the States there is an Education Minister assisted by subordinate Ministers and then a secretary to execute the government's plans. The Director of Education controls the Elementary and Secondary education in states with the help of inspectorate, which is directly responsible for the supervision of schools. The Universities in India are purely autonomous bodies, where as secondary institutions are partly under the State Government, partly under local bodies and largely under private control, but recognized and aided by the State departments of education. The majority of educational institutions are managed on grant-in–aid basis, by non-governmental agencies, such as local bodies, religious or denominational trusts, private associations or individuals. Modern Education System in India Soon after gaining independence in 1947, making education available to all had become a priority for the government. As discrimination on the basis of caste and gender has been a major impediment in the healthy development of the Indian society, they have been made unlawful by the Indian constitution. The 86th constitutional amendment has also made elementary education a fundamental right for the children between the age group 6 to 14.

The present education system in India mainly comprises of primary education, secondary education, senior secondary education and higher education. Elementary education consists of eight years of education. Each of secondary and senior secondary education consists of two years of education. Higher education in India starts after passing the higher secondary education or the 12th standard. Depending on the stream, completing graduation in India can take three to five years. Postgraduate courses are generally of two to three years of duration. After completing post graduation, scope for doing research in various educational institutes also remains open. There are quite a good number of educational institutes in India that can compete with the best educational institutes of the world. The aim and purpose of higher education is to provide an integrated and coherent picture of the creation. It is through education that we must obtain a sense of perspective, a synoptic vision and a coordinated view of the different items of knowledge. Education is not knowledge or information. It is, in fact, a training of mind and a training of spirit; it should aim at imparting both knowledge and wisdom. University education in India must aim at providing the knowledge and wisdom, which are necessary attributes of a fuller personality. Unfortunately, universities in this country have been working under severe limitations and hence suffer from all possible ills, which

would vitiate an unhampered academic growth. Some of the main events in the sphere of university education during the post-independence period have been the appointment of the University Education Commission in 1949, the establishment of the University Grants Commission in 1953 and the passing of the UGC Act in March 1956 by the Parliament and establishment of a number of national laboratories and other institutions of Higher Technical and Engineering Education. Out of these events the appointment of the University Education Commission could be regarded as an epoch-making event. The University Education Commission (1948-49). The setting up of the University Education Commission popularly known as the Radhakrishnan Commission in 1948 was a major landmark for enunciating the goals and objectives of higher education in Independent India. This Commission was appointed under the Chairmanship of Dr. Sri. S. Radhakrishnan. The Commission was required to study the problem of university education in the country and to suggest measures for its reforms keeping in view the needs and aspirations of the people. The then Minister of Education, Abdul Kalam Azad inaugurated this Commission on December 6, 1948 and gave it the necessary directions. The Commission made, after extensive deliberations, some very significant recommendations, many of which are pertinent even in the contemporary context.

The recommendations were as follows:

1. The aim of education must be to awaken and promote the innate ability of a person and to train him/her for development of self and democratic attitudes. Thus, the purpose of education is to acquaint an individual with his/her cultural heritage and to impart professional and vocational training.
2. The Commission emphasized the role of post-graduate education, training and research for the advancement of knowledge.
3. It stressed the university's role in studying agriculture in an agrarian economy like India and suggested that special attention should be paid to the development of higher education in rural areas. It also emphasized that the scientific and technical base of the education system should be strengthened.
4. Realizing the importance of the medium of instruction, the Commission recommended that English as a medium of instruction in higher education should be replaced as early as possible by an Indian language.
5. A university degree should not be required for government administrative services. Special State examination for recruitment to various State services should be organized.
6. Realizing the deficiencies of the examination system and the magnitude of the wastage, the Commission recommended a thorough study of the scientific methods of educational testing and appraisal.

In subsequent years, several Commissions and Committees were also appointed by the government for educational restructure and changes in the system of higher education in India. The important documents that have been published are:

1. Report of the Education Commission, 1964-66
2. National Policy on Education, 1968
3. Draft Policy on Education, 1978

4. National Commission on Teachers-II, 1983
5. Challenge of Education: A Policy Perspective, 1985
6. National Policy on Education, 1986
7. National Policy on Education: A Programme of Action, 1986
8. National Policy on Education: A Programme of Action, 1992

Brief history of education policies:

On September 23, 1952, the Government of India appointed the Secondary Education Commission under the Chairmanship of Dr. A.L. Swami Mudaliar. Also known as the Mudaliar Commission after his name. The Commission studied the various problems of secondary education in the country and submitted its report on August 29, 1953 in 240 pages consisting of 15 chapters. The Commission gave the following recommendations: The Commission advocated that the aim of secondary education is to produce ideal citizens, to develop capacity for earning money, to develop human virtues and to develop the quality of leadership in students. Character formation and development of personality should be the main aim of secondary education. Secondary education should be for children between 11 to 17 years of age and these seven years should be divided into two parts-the Junior High School stage for three years and High School stage for four years. The Commission also suggested some changes in the Secondary school curriculum. Agriculture should be made compulsory subject for schools in villages and home science should be made compulsory for girls. Multipurpose schools should be opened according to the needs and interests of the students. Mother tongue or the regional language should be made the medium of instruction. The Commission recommended that the curriculum should be diversified. It emphasized on vocational courses and suggested that at the Middle School Stage, the curriculum should include languages, social studies, general sciences, mathematics, art and music, craft and physical education. It also gave important suggestions pertaining to suitability of textbooks and improving their quality. The aim of the method of teaching should not be merely imparting of knowledge, but also inculcating desirable values and proper attitudes and habits of work in the students. The Mudaliar Commission suggested that there should be a Director of Education in every State to advise the Minister and should have a direct access to the Minister concerned. Finally the Mudaliar Commission made recommendations to improve the financial conditions in the realm of secondary education. There should be a close cooperation between the Center and the State in matters connected with reorganization and improvement of secondary education. Thus, we see that the Commission has given numerous practical suggestions for the reforms of secondary education in the country.

The Commission has drawn our attention to the various defects of the existing system of secondary education. There is no doubt that in spite of some defects of the recommendations of the commission; if the suggestions had been implemented in full, secondary education in the land would have improved to a great extent. Narendradeo Committees on Secondary Education Two Narendradeo Committees were set up to suggest reforms in secondary education. The First Narendradeo Committee was set up in 1939 during the First Congress Ministry in U.P. The Committee recommended Hindustani as the medium of instruction for

children between 7 and 14 years of age. It gave some suggestions for Basic Education and Secondary Education. The Second Narendradeo Committee was set up in 1952-53. The current system of secondary education in U.P. is a contribution of this Committee. Education Commission (1964-66). After the achievement of independence our leaders introduced Five Year Plans with a view to effect the development of the country in various fields. In these plans education, too, found an important place. So plans have been made for the development of various stages and kinds of education. However, the execution of these plans made aware of certain inherent weaknesses due to which the expected success was not being achieved. Education appeared to be one of the areas, which indicated many problems and needed efforts for immediate solutions. Thus, the Government appointed the University Education Commission in 1948 and Secondary Education Commission in 1952 for suggesting reforms in education. The recommendations of these Commissions could not be implemented in their entirety.

Consequently the defects in the area of education persisted. For removal of these defects the Government of India appointed an Education Commission in 1964 under the Chairmanship of Dr. D.S. Kothari. The Commission is thus popularly known as 'Kothari Commission'. The purpose of the Commission of 1964, too, was to study the various problems of education in the country and suggest measures for their removal. This Commission basically emphasized on education for national development. In its comprehensive report, the Education Commission proposed that education should: ● address the problems of national development, particularly issues concerning self-reliance, economic growth, employment and social and national integration; ● relate to the life, needs and aspirations of the people; ● help improve productivity by emphasizing work-experience, vocationalization, improvements in scientific and technological education and research; ● be perceived as the main instrument of change through human development; ● contribute to social and national integration; ● modernize the society through knowledge and its applications and ● inculcate social, moral and spiritual values in the people.

Most important responsibility is to lower the dominant place given to examinations, to improve the standard in every aspect and by a symbiotic development of teaching and research, to create at least a few centers comparable to those of their type in any other part of the world. The Commission set out the following functions for the universities in the modern world: ● To seek and cultivate new knowledge, to engage vigorously and fearlessly in the pursuit of truth and to interpret old knowledge and beliefs in the light of new needs and discoveries; ● To provide the right kind of leadership in all walks of life by helping the individuals develop their potential; ● To provide society with competent men and women trained in all professions who, as cultivated individuals, are imbibed with a sense of social purpose; ● To strive to promote equality and social justice and to reduce social and cultural differences through diffusion of education; ● To foster in the teachers and students, and through them in the society generally, the attitudes and values needed for developing the 'good life' in individuals and society; ● To bring the universities closer to the community through extension of knowledge and it's applications for problem solving. National Policies on Education The necessity of national policy on education cannot be over emphasized, as it is related to the essential development of a country. It was in 1968, for the first time that a national policy on education was formulated for preparing suitable hands for shouldering responsibilities in

the various fields of our national reconstructions. Number of programmes was included in this policy viz. free and compulsory education, development and protection of all the Indian languages, equality of educational opportunities, identification of gifted children, provision of work experience and national service scheme, science education and research, education in Agriculture and Industries, reform in examination system, part time education and correspondence curriculum, expansion of literacy and adult education and sports and games.

On April 20, 1986 a New Educational Policy was placed before the Indian Parliament for consideration and approval. It was a result of the renewed priority assigned to Education by the Government of Late Shri Rajiv Gandhi. The policy had the following objectives: 1. Vocationalization of education; particularly at the secondary stage of education, the curriculum should be job-oriented. 2. To awaken people about the various scientific and technological developments and to make the students at the various stages of education aware of the same in order that they may utilize them in their future life. 3. To encourage the governmental and non-governmental efforts for wiping out illiteracy and to emphasize the necessity of adult education, formal education and open schools. The basic recommendations of the policy were related to national form of education, more emphasis on learning, delinking degree for any service, vocationalization of education, importance on moral values, emphasis on reforms in the examination system, education of the weaker section of the society, starting of an All India Educational Service, starting of Open Universities, establishing many Navodaya Vidyalayas, women education, Operation Blackboard and preservation of culture. For raising the standard of women, special attention has been paid on their education in the new educational policy. In order to minimize the prevailing distinction between men and women, it has been recommended that in technical and vocational education women should be accorded due place.

The National Knowledge Commission was constituted on 13th June 2005 as a high level Advisory Body to the Prime Minister of India. The Terms of Reference of NKC are: ● Build excellence in the educational system to meet the knowledge challenges of the 21st Century and increase India's competitive advantages in the fields of knowledge. ● Promote creation of knowledge in Science and Technology laboratories. ● Improve the management of institutions engaged in Intellectual Property Rights. ● Promote knowledge applications in Agriculture and Industry. ● Promote the use of knowledge capabilities in making government an effective transparent and accountable service provider to the citizen and promote widespread sharing of knowledge to maximize public benefit.

The most recent Yashpal Committee, 2009 emphasized that at the undergraduate level students should be exposed to various disciplines like humanities, social sciences, aesthetics etc., in an integrated manner. This should be irrespective of the discipline they would like to specialize in, whether general or professional higher education, like medicine, engineering, etc. Therefore, the Committee recommended that professional institutions, including IITs and IIMs, should be returned to universities in a complete administrative and academic sense by abolishing intermediary licensing bodies. Such a measure will open the possibility of new kinds of course-designing for professional learning in all fields from management and architecture to medicine and engineering.

Recent trends in the education policies:

The essence of all these Committees and policies has been to make education accessible to all, develop moral and ethical values, strengthen social and national integration, modernize the system, follow the three language formula, induce the spirit of scientific enquiry, vocationalize education, develop self-confidence and support for autonomy, innovation and research. While the reforms are well-articulated and well-thought, the problem has always been effective implementation. There have certainly been great strides in terms of universalization of primary education with more than 95 % enrolment. This has led to an remarkable 78% improvement in the literacy rate. Moreover, the gross enrolment ratio in higher education has increased to 25.2 per cent from mere 0.7 per cent at the time of Independence. To be very frank, if there is one sector that touches the lives of all citizens, it is the education sector. In the last four or five years, there has been a great impetus on reforms in higher education and technical education since it was the need of the hour. Several interactions between the newly constituted NITI Aayog and PMO with regulators and the officials of the MHRD have paved the way for many reforms.

The main thrust on reforms has been on giving greater autonomy to existing well-performing educational institutes, making accreditation mandatory, supporting good governance while regulating underperforming institutes, starting new centrally funded IIT, Indian Institutes of Science and Research. Indian institutes of IT and central universities for creating institutes of national importance and support for innovation and research. The other initiatives include increasing gross enrolment ratio. In higher education with the principles of access, equity, quality, accountability and affordability supporting skill development, developing problem-solving ability, building confidence of students, increasing employability of graduates, creating jobs through start-up ecosystem in universities and educational institution. These Initiatives are enumerated here.

Accreditation

All universities and institutes have been mandated to get themselves accredited either by NAAC or NBA. The accreditation is based on outcomes rather than inputs. NBA has been a signatory to the Washington Accord under which all graduates from accredited technical institutes are treated on a par with the graduates of the signatory countries. NAAC has also revised its format of accreditation on the lines of outcome basis. All institutes have been asked to display the accredited status on the instate portal, so that stakeholder students are of the quality of the institutes.

Autonomy

Number of autonomous colleges is just around 10% of all the colleges.

Prime minister's research fellowship

In order to attract bright students to do research in India to solve the country's daunting challenges, a Special Prime Minister's Research Fellowship Scheme for 1,000 graduates, with CGPA of 6 and above on a10- point scale, from IITs, NITs, IISERs, has been instituted. These meritorious students will fit to receive Rs. 70,000—Rs. 80,000 per month as fellowship grant.

Imprint

In order to tap the great research talent in IIT and I I of Science and to address the science and technology challenges to make India self-reliant, a catalytic scheme called Impacting Research, Innovation and Technology (IMPRINT) has been started by the MHRD. Many innovative research areas are being addressed under this scheme.

GIAN

A scheme—Global Initiative of Academic Networks (GIAN) — has been formulated by the MHRD to attract the best of the faculty from all over the world to Indian Universities and Institutions and conduct state-of the- art courses of one-to two –week duration. Till date, more than 1,400 courses have been approved and about 1,000 foreign faculty has visited different institutions and universities in India to conduct relevant courses. These courses have been accoded and some of them are being taken forward as massive open online courses (MOOCs).

SWAYAM

A National MOOCs portal study webs of Active-Learning for Young Aspiring Minds (SWAYAM) has been created that has more than 1,000 courses from the best faculties of India in the domain of engineering science, mathematics, humanities and social sciences, economics, management, arts and recreation and languages. These are available free of cost to any interested learner. These courses are available anytime, anywhere on any device. There are as many as 20 lakh usurers registered on this platform. The goal is to have 10,000 courses and 30 million usurers in about three years. These courses are also available on 32 direct-to-home Swayam Prabha channel. The UGC and AICTE have brought regulations permitting up to 20% credits earned through MOOCs so that students get an opportunity to study a subject of his/her choice from the best faculty in the country.

Smart India hackathon

In order to tap and use the talented students' innovative potential, the AICTE and MHRD have embarked upon a national level Smart India Hackathon. The Indian hackathan is fast developing into one of the largest open innovative models in the world.

Smart-up policy

The AICTE has been created its own student start-up policy on the lines of the government's start –up policy to encourage students to initiate start-ups while still in college. The aim is to facilitate the students to contribute towards creating employment opportunities for others as well rather than just seeking jobs for themselves. The policy was launched by former President of India, Shri Pranab Mukherjee on 16 Nov 2016..

Skill India

India needs huge skilled manpower in the coming decade to use its demographic dividend to its best. Hence, skills that are required in new technology domains in the immediate future like IoT (Insert on Things), AI (Artificial Intelligence), Robotics, Data Analysis and Club Computing are being imparted as part of the curriculum. Some are being imparted to school drp-outs under Pradhan Mantri Kaushal Vikas Yogana (PMKVY).

The AICTE has imitated several other schemes for improving the quality of technical education and providing enriching experience to students in colleges like Curriculum Revision, Student Induction Programme, Faculty Induction Programme, Faculty Development Programme, and Mandatory Internship for students, Industry Institute Interaction Cell, Innovation Laboratory/ Workshop, Entrepreneurship Club & Incubator. It has also initiated awards for clean and green campuses, Chhatra Vishwakarma awards for innovative projects and best student start-up.

The AICTE has mandated all colleges to adopt at least five villages each under Unnat Bharat Abhiyan The scheme is akin to Sansad Adarsh Gram Yojana.

It has instituted special scholarships for single girl child students' and Divyang students.

It has instituted150 full-time National Doctoral Fellowship per year. It has increased the number of QIP centers

It has started an innovative Professor Emeritus— Practicing Engineers Scheme.

It has signed several MOUs with private and public enterprises.

In a nutshell, the MHRD and AICTE has been constantly endeavoring to improve the quality of higher education through several reforms, mentorship and funding.

3.9 Conclusion

Education is a major aspect of development of any modern society. Education brings awareness in people and keeps them away from superstitious beliefs. It provides best possible settlement not only in India but also in many western countries. Education will direct the person to move in right path at all times in life. A highly educated person can always manage things independently. An educated person can led his life with many comfort. Education makes students physically and mentally strong. Education is the best investment for the people because well educated people have more opportunities to get a job which gives them satisfaction. Literacy rate depend on education. All the advancement in technology is due to education.

Education is the ultimate factor that provides employment, so it plays a vital role in development of the country and also in raising the per ca pita income of the country. Education is the best weapon to eradicate poverty. Education promotes knowledge and understanding in rural communities. Education keeps the people away from superstitions beliefs. Educated person will be health conscious. Education is only pathway to maintain success in life. It increases the ethical values of the person. Education is not only learning about books but also learning about life. It rapidly increases your skill and awareness. Educated person will identify the difference between good and bad. Education provides food at all times. In life if education is there with us, there is everything in life. It is best source to raise the economy.

The fundamental problem of economics of education is how the society, institution and the households make use of the limited human and material resources they have, to best satisfy their unlimited wants for education. The solution to the fundamental problem requires the

application of certain economic concepts. The study of economics of education includes private and social rates of returns to education, human capital and signaling theories of education, non-pecuniary benefits of education, education and economic development, contribution of education to the economy, measuring educational expenditure, manpower planning, educational planning and human resource development, educational cost, cost analysis, educational production, educational effectiveness and efficiency, costs-efficiency and cost-effectiveness, cost-benefit analysis and economics of teacher supply, educational and equity.

3.10 Key Terms Simplified

Internal rate of return: The rate of discount which makes the present value of the costs equal to the present value of benefits.

Employment rate: It refers to the number of persons in employment as a percentage of the population of working age.

Educo-genic Factor: This refers to strong motivation for schooling of children that arises as a result of educated elders' presence in the families. These factors may help in providing a suitable educational environment for the children in families.

Unemployment rate: It refers to unemployed persons as a percentage of the civil labour force. **Unemployed:** They are defined as people actively seeking employment and currently available to start work.

Employed: They are defined as those who work for pay or profit for at least one hour a week, or who have a job but are temporarily not at work due to illness, leave or industrial action.

Democratization: It is the degree of development of political institutions at national, state, and local levels as measured by the Freedom House (2007) index. Democratization worldwide is primarily determined by expanding access to education, higher income, and lower military expenditure as a fraction of the public budget.

Human Capital: It refers to the stock of knowledge that a particular worker has which contributes to his/her productivity

Sheepskin effect: is an applied economics theory that people possessing an academic degree earn a greater income than people who have an equivalent amount of studying without possessing an academic degree. There are many applied economics papers which investigate the signalling of possession of such an academic degree. For example, if Student X is one credit short of a Bachelor's degree, while Student Y has earned their Bachelor's degree, then the two students have essentially the same amount of education. However, according to the sheepskin effect, Student Y will earn a greater income than Student X.

Opportunity cost, or **alternative cost:** It is the cost of making a particular choice. It is the the most valuable choice out of those that were not taken. Naturally, opportunity cost will require sacrifices. When an option is chosen from two mutually exclusive alternatives, the opportunity cost is the cost incurred by not enjoying the benefit associated with the alternative choice.

Signaling hypothesis: According to it the workers acquire educational credentials to signal their ability related characteristics to the prospective employers.

3.11 Questions with Answer Hints

Questions Carrying 2.5 marks

1. What do you mean by Economics of education?

   [Answer: See second paragraph of section 3.2]

2. Who are the stake holders of educational system?

   [Answer: See fourth paragraph of section 3.2]

3. Define demand for education.

   [Answer: See first paragraph of section 3.4]

4. What do you mean by social demand for education?

   [Answer: See fourth paragraph of Section 3.4]

5. What are the characteristics of a family from where we can expect a favorable demand for education?

   [Answer: See seventh paragraph of Section 3.4]

Questions Carrying 5 marks

1. What are the individual determinants of education?

   [Answer: See second paragraphgraph of Section 3.4]

2. State the role of parents and family in education of an individual.

   [Answer: See sixth paragraph of Section 3.4]

3. What are the consumption benefits of education?

   [Answer: See first paragraph of Section 3.5]

4. Enumerate Different types of education that could be provided to the rural people so as to promote rapid rural and agricultural development.

   [Answer: See third paragraph of Section 3.7]

5. State a few recommendations of National Knowledge Commission.

   [Answer: See tenth paragraph of Section 3.9]

Questions Carrying 10 marks

1. Discuss the determinant of education in detail.

   [Answer: See Section 3.4]

2. Write a short note on effect of education on poverty and income distribution.

   [Answer: See Section 3.6]

3. What is the link between employment generation and education-Discuss.

   [Answer: See Section 3.7]

4. Write a short note on development of education policies under various plans.

   [Answer: See Section first three paragraphs of Section 3.9]

5. Make a comparative study of the recommendations of the various important committees for uplifting education in India.

   [Answer: See Section 3.9 fifth to tenth paragraphs]

6. Write a short note on the recent trends in the education policies of the government of India.

   [Answer: See Section 3.9 last four paragraphs]

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UNIT 4 ■ Economics of Health

Structure

4.1 Objectives

After reading this unit, you will be able to:

- understand the concept of health economics;
- relate the concept of health with development;
- relate socio-economic status with health inequality;
- understand the determinants of health;
- study the major health initiatives of government of India.

4.2 Introduction

Economics of health can be defined as the application of economic theories, tools and concepts of economics as a discipline to the topics of health and health care. Since it is concerned with issues related to the allocation of scarce resources to improve health, this includes both resource allocation within the economy to the health sector and within the health care system to different activities and individuals.

The need for health care is increasing due to rapid population growth and changes in disease pattern. Related with this, health care costs are expected to be rapidly increasing. Apart from explosion of costs, inequity, misallocation and inefficiency are believed to be serious challenges to the health care system. These problems put a considerable strain on our limited health care resources. Health economics is now a term commonly used in public policy documents, in the medical and scientific literature, and in the lay press. There are also very visible signs of change in the health care market. Attention is shifting from the passive funding and administration of systems, in which physicians identify and provide appropriate care, to concerns about the resource costs of care and the health outcomes achieved from providing care.

What a buyer wants to know is the difference between this state of well-being with and without the commodity being considered for ordinary goods. The buyer has little difficulty in evaluating the counter-factual-that is what the situation will be if the good is not obtained not so for the bulk of health care. The striking point is not simply that it is difficult for the consumer to judge quality before the purchase but that it is difficult even after purchase.

According to a popular definition of economics it is the study of how society decides what, how and for whom to produce. In analysing these issues, health economics too applies the same analytical methods that would be functional to any good or service that the economy produces. However, it also always asks if the issues are different in health care. This economic perspective useful in the context of health care as:

Health economics examines the problem of scarcity as it arises with respect to health and health care.

It examines how we as individuals and societies confront the fact that while the resources available to us are limited, the alternative uses for these resources are unlimited.

Thus, the basic questions in health economics are:

How is health produced?

What role does health care play in its production?

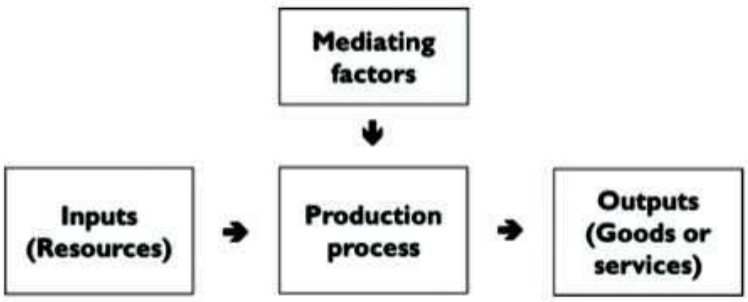
What is the value of health?

How to measure health status?

What influences demand for health and health care?

What influences the supply of health care?

How can equilibrium between demand and supply be achieved?



The discipline of health economics is the study of these questions and the answers to them that individuals and societies have put forward. Principles of health economics consider supply and demand issues and how the two might interact given that the standard market solution generally fails due to problems such as: Adverse selection, Moral hazard, Asymmetric information, and Supplier induced demand. Economics deals with both health and health care as a good or service that is manufactured, or produced. All production requires the use of resources such as raw materials and labour, and we can regard production as a process by which these resources are transformed into goods:

The inputs to this productive process are resources such as labour, equipment and buildings (capital), land and raw materials. The output of a process using health care inputs, such as health care professionals, therapeutic materials and clinics, could be an amount of health care of a given quality that is provided, for example. How inputs are converted into outputs may be affected by other mediating factors, for example the environment in which production takes place, such as whether the clinic is publicly or privately owned. A key observation of economics is that resources are known to be limited in quantity at a point in time, but there are no known bounds on the quantity of outputs that is desired. This both acts as the fundamental driving force for economic activity and explains why health and health care can and should be considered like other goods. This issue, known as the problem of scarcity of resources means that choices must be made about what goods are produced, how they are to be produced and who will consume them. Another way to view this is that we cannot have all of the goods that we want, and in choosing the goods that we will have, we have to trade off one good for another. The term economic goods, is sometimes used to describe goods and services for which economic analysis is deemed to be relevant. These are defined as goods or services that are scarce relative to our wants for them.

Health care is such an economic good: first, because the resources used to provide it are finite and we can only use more of these resources to create health care if we divert them from other uses; and secondly, because society's wants for health care, that is what society would consume in the absence of constraints on its ability to pay for it, have no known bounds. Nowhere in the world is there a health care system that devotes enough resources to health care to meet all of its citizens' wants. Thus, in the economy as a whole, there are not enough scarce resources to meet all of the wants that people have, so one have to choose which wants are met and which are not met; in the health care system there are not enough health care resources to meet all of the health needs that people have, so we have to choose which needs are met and which are not met.

The market for health care deals with the demand for health care. However, in considering this demand, it is important to recognise that health care has special characteristics that may make it different from other goods. One factor is that health care is not usually demanded because it is in itself pleasurable; in fact, it may be unpleasant. Instead, it is demanded mainly to improve health. So, even if health care is in itself unpleasant, it leads to more pleasure than would otherwise have been the case.

Thus, health can indeed be regarded as a good, in fact a fundamental commodity that is essential to people's well-being, leading to a demand for improvements in it. Health does have characteristics that more conventional goods have; it can be manufactured; it is wanted

and people are willing to pay for improvements in it; and it is scarce relative to people's wants for it. However, its relationship with the demand for health care is not one-to-one, because although health is affected by health care, it is also affected by many other things and it also affects other aspects of welfare, not just health care. As a good, health is even more peculiar than health care, because of its characteristics. It is less tangible than most other goods, cannot be traded and cannot be passed from one person to another, although obviously some diseases can. Health economists generally interpret a health care need as the capacity to benefit from it, thereby relating needs for health care to a need for health improvements. Not all wants are needs and vice versa. For example, a person may want nutrition supplements, even though these will not produce any health improvements for them; or they may not want a visit to the dentist even if it would improve their oral health. Thus, demand for health care can be analysed as if it were any good or service, but it has peculiarities that may mean that the usual assumptions about the resource allocation effects of markets do not hold. Moreover, it may well be that people wish resource allocation to be based on the demand for health or the need for health care, neither of which can be provided in a conventional market.

Resources are scarce and there are competing uses for them. So, if a country decides that the aim of its health system is to improve its population's health and allocates a fixed budget to health care, it will obtain the biggest health gain if scarce health care resources within its health system are used efficiently. Pareto efficiency is a debatable idea as a way of thinking about how resources should be allocated at a societal level as a policy leading to benefit of some people may lead to worse off of some others which at societal level may or may-not be measured. Thus, regarding health care three efficiencies are judged namely, technical efficiency, economic efficiency and social efficiency. The concept of technical efficiency is used in analysing the production of health and health care. Production is technically efficient if the most output possible is produced from a given set of inputs, or the fewest inputs possible are used to produce a given amount of output. Technical efficiency is only concerned with how many inputs are used in production, while economic efficiency is related to the cost of those inputs. Economic efficiency is achieved if the most output possible is produced for a given cost, or a given amount of output is produced at the lowest possible cost. Social efficiency is a much broader concept. Both technical efficiency and economic efficiency concern production, and if the supply side of the market achieves economic efficiency in every market, there is allocative efficiency in production for the economy as a whole. An equivalent concept for the demand side of the market is allocative efficiency in consumption where, given prices of goods, consumers maximise their utility. Social efficiency is where both of these are achieved.

Apart from efficiency another factor that guides the allocation of scarce resources is the criterion of equity. It is seen that people attach more importance to equity in health and health care than they do to, many other goods and services. Equity is an important policy objective in almost every health care system in the world. Here, equity must be distinguished from equality. Equity means fairness; in the health care context this means a fair distribution of health and health care between people and fairness in the burden of financing health care. Equality means an equal distribution, but it may not always be fair to be equal.

Equity in the distribution of health is almost always expressed in terms of inequalities in health between different socioeconomic and demographic groups within populations. Such health inequalities, particularly those that demonstrate that health status levels vary systematically and inversely with socioeconomic status, are always important in health policy debates within most countries and are a major concern of governments, depending on their political preferences. Many countries include reduction of inequalities in health as a key aim of their health policy. It may be argued that reduction in health inequalities is in fact the only real equity issue for public policy, because a concern for a fair distribution of health care derives solely from a concern about fairness in the levels of health that different members of society have. People take four roles in the healthcare namely, contributors, citizens, provider and consumers.

4.3 Health Dimensions of Development

In order to explain the relationship between health and economic development, it is necessary to understand the concept of health in a broad sense. Health is not only the absence of illnesses; it is also the ability of people to develop to their potential during their entire lives. In that sense, health is an asset individuals possess, which has intrinsic value (being healthy is a very important source of well-being) as well as instrumental value. In instrumental terms, health impacts economic development in a number of ways. For example,

- it reduces production losses due to worker illness,
- it increases the productivity of adult as a result of better nutrition,
- it lowers absenteeism rates and improves learning among school children.
- It allows for the use of natural resources that used to be totally or partially inaccessible due to illnesses,
- it permits the different use of financial resources that might normally be destined for the treatment of ill health.

In totality, health affects economic development directly through labor productivity and the economic burden of illnesses and also indirectly through aspects such as child health which affect the future income of people through the impact health has on education. This indirect impact is easier to understand if it is observed on a family level. When a family is healthy, both the mother and the father can hold a job, earn money which allows them to feed, protect and send their children to school. Healthy and well-nourished children will perform better in school and a better performance in school will positively impact their future income. If parents ensure that their children have a high probability of reaching adulthood, in general they will have fewer children and they will be able to invest more in health and education for each of them. Additionally, the loss of health affects the poor to a greater extent since the main, and at times, only asset they have is their body. When they become ill they have fewer alternative solutions and suffer greater consequences. The results of historical studies suggest a very strong relationship between health and economic growth. Robert W. Fogel

finds that between one third and one half of England's economic growth in the past 200 years is due to improvements in the population's food consumption. The existence of an impact of health on economic growth with similar magnitudes has been verified for different time periods and countries. Cross-country macroeconomic studies suggest that health positively affects growth. For example, an increase in life expectancy from 50 to 70 years (a 40% increase) would raise the growth rate by 1.4 percentage points per year. A 10% decrease in malaria is associated with an increased annual growth of 0.3% and malnutrition causes a decrease in the annual GDP per capita growth worldwide of between 0.23 and 4.7%.

Nevertheless, when the indirect impact of health on income through its positive effect on education is analyzed, a very sizeable relationship is found. Children from poor households reach adulthood with chronic health problems that affect their cognitive abilities and cause them to miss a considerable number of school days; both imply that their future ability to generate income will be hampered. In general, results show that health during early childhood determines health conditions and educational performance as adolescents, which in turn affect health conditions and income as adults. It has been found, for example, that taller children complete more grades than shorter children, that the effects of childhood malnutrition on child causes late school enrollment, and nutrition and that childhood health in general are important determinants of academic achievement. Several international multilateral organizations have studied the effects of health and malnutrition on education. In general, results show that school performance is negatively affected by micronutrient deficiencies and by the presence of protein-energy malnutrition, as well as by vision and hearing problems. At the same time, hunger leads to a lack of attention. The impact of health on educational performance is not seen only in deficiencies in the consumption of nutrients. Early childhood development is a critical element for the cognitive, emotional and physical progress of individuals. Moreover, proper childhood development depends to a large extent on adequate prenatal care for the mother, that childbirths take place under adequate medical supervision, and that suitable and proper preventive and curative medical attention be provided during childhood. Mental health problems such as Attention-Deficit/Hyperactivity Disorder (AD/HD) can also considerably affect performance in school. For all these reasons, an agenda focused on early-childhood intervention must be laid out to take action.

Healthcare performance is strongly dependent on the economy, but also on the health systems themselves. This link should not be underestimated. Investment in health is not only a desirable, but also an essential priority for most societies. A basic message that emerges is that investments in health and the design of health financing policies should be addressed in terms of the interaction between health and the economy. Just as growth, income, investment and employment are a function of the performance and quality of the economic system, its regulatory frameworks, trade policies, social capital and labour markets, etc, so health conditions (mortality, morbidity, disability) depend not just on standards of living, but on the actual performance of health systems themselves. Let us go over some of these interactions.

Health performance and economic performance are interlinked. Wealthier countries have healthier populations for a start. And it is a basic truth that poverty, mainly through infant

malnourishment and mortality, adversely affects life expectancy. National income has a direct effect on the development of health systems, through insurance coverage and public spending, for instance. As demonstrated in 1997 by the WHO Commission on Macroeconomics and Health for a panel of 167 countries, while health expenditures are determined mainly by national income, they increase faster than income. Another well-known relationship is an institutional one. Some countries have gone very far in this respect, with Ireland actually banning smoking in its famous pubs! Such courageous initiatives cannot succeed without institutional backing, whether legalistic or otherwise. Another example of how institutional arrangements can help is through universal provision of insurance coverage, which a larger fiscal base and a small informal sector help to attain. Globalisation in general, and trade liberalisation in particular, also affect healthcare, via constrained pricing and trade policies of pharmaceuticals, and the need for enhanced health surveillance across borders and populations.

The effects of health on development are clear. Countries with weak health and education conditions find it harder to achieve sustained growth. Indeed, economic evidence confirms that a 10% improvement in life expectancy at birth is associated with a rise in economic growth of some 0.3-0.4 percentage points a year. Disease hinders institutional performance too. Lower life expectancy discourages adult training and damages productivity. Similarly, the emergence of deadly communicable diseases has become an obstacle for the development of sectors like the tourism industry, on which so many countries rely.

Health financing, through out-of-pocket expenditures, is inequitable and can expose whole populations to huge cost burdens that block development and simply perpetuate the disease/poverty trap. On the other hand, health systems need financing and investment to improve their performance, yet this need cannot in turn impose an unfair burden on national spending or competitiveness. This is a very delicate balance for policymakers to have to strike. There are other challenges too. For instance, in high-income countries, the lack of benefit portability associated with employer-provided health insurance often constrains worker mobility, so impeding the efficiency of labour markets we all want to see. And there are indirect effects on other spending decisions, both by households and governments. In other words, if you want to raise investment in health spending, you may need to find cuts elsewhere in the economic system.

4.4 Health Inequality and Socio-economic Status

The most fundamental causes of health disparities are socioeconomic disparities. Socio-economic status has traditionally been defined by education, income, and occupation. Each component provides different resources, displays different relationships to various health outcomes, and would be addressed by different policies.

Education:

Education is perhaps the most basic SES component since it shapes future occupational opportunities and earning potential. It also provides knowledge and life skills that allow

better-educated persons to gain more ready access to information and resources to promote health. Studies examined how education, income, and occupation relate to risk factors for cardiovascular disease; when these were taken together, only education remained as a significant predictor. While most studies have examined years of completed education, early educational experiences also may be important.

To the extent that education is the key to health inequality, policies encouraging more years of schooling and supporting early childhood education may have health benefits. When policymakers debate the merits of increasing access to education, they rarely consider improvements in the health of the population. Other virtues—increasing human capital, boosting productivity, augmenting lifetime earnings, and improving the socialization of the next generation—follow from improvements in educational attainment. But in this area, as in others, collateral benefits such as decreasing health care costs also might emerge from increased investment in education.

Income:

In addition to providing means for purchasing health care, higher incomes can provide better nutrition, housing, schooling, and recreation. Independent of actual income levels, the distribution of income within countries and states has been linked to rates of mortality. Although controversial, one explanation is that underinvestment in public goods and welfare and the experience of inequality are both greater in more stratified societies and that these, in turn, affect health. If this is correct, then highly stratified societies take an additional toll on health beyond that associated with absolute deprivation. Although the association between income and health is stronger at lower incomes, income effects persist above the poverty level. Health effects at the upper part of the distribution may more strongly reflect relative status, while at the lower part they may be more linked to absolute deprivation.

Occupation:

Occupational status is a more complex variable, and its measurement varies depending on one's theoretical perspective about the significance of various aspects of work life. One aspect is simply whether or not one is employed, since the employed have better health than the unemployed have. Although some of this association is a function of the "healthy worker" effect, there is evidence that being unemployed and the length of unemployment affect health status. However, some types of benefits for the unemployed can buffer the adverse effects on health. Entitlement benefits appear to reduce some negative health effects, while means-tested benefits do not. Threat of unemployment and job insecurity can affect health as well. Among the employed, occupations differ in their prestige, qualifications, rewards, and job characteristics, and each of these indicators of occupational status is linked to mortality risk. Lower-status jobs expose workers to both physical and psychosocial risks. They carry a higher risk of occupational injury and exposure to toxic substances. In addition, job strain and lack of control over work are greater the lower one's occupational status. In the Whitehall study of British civil servants, differences of coronary heart disease incidence by occupational grade were largely accounted for by differences in job control.

SES and environmental exposures

Exposure to damaging agents in the environment, including lead, asbestos, carbon dioxide, and industrial waste, varies with socioeconomic status. Those lower on the SES hierarchy are more likely to live and work in worse physical environments. Poorer neighborhoods are disproportionately located near highways, industrial areas, and toxic waste sites, since land there is cheaper and resistance to polluting industries, less visible. Housing quality is also poorer for low-SES families. Low-SES persons also experience greater residential crowding and noise. Crowding within the home appears to be more problematic for health than is area density. Noise exposure has been linked to poorer long-term memory and reading deficits among children and to hypertension among adults.

SES and social environment:

SES-related health effects of social environments may be even more important than those of physical environments. Isolation and lack of engagement in social networks are strong predictors of health. The socially isolated have relative risks of mortality ranging between 1.9 to almost five times greater than those with better social connections. Patterns of social interaction also affect disease risk. For sexually transmitted diseases, transmission is more rapid in high-risk networks, which are often clustered in poorer areas, thus putting lower-SES persons at greater risk for exposure.

Social networks and social cohesion are affected by the broader environment. Similarly, the social environments of high-rise housing projects impede community social organization and parental supervision. Communities differ in the extent to which their institutions foster positive social ties. Those with greater social cohesion and social capital have lower rates of homicide as well as lower overall population mortality. The literature on social capital has not yet explained why neighborhoods with similar demographics differ on social cohesion and trust, or established whether social capital is stable. But the associational evidence between social trust and health outcomes is striking and suggests that these are complementary frontiers worthy of exploration for addressing health issues along with raising income or educational attainment.

SES and health care:

Access-to, use-of, and quality of health care vary by socioeconomic status. Access to primary care may be one pathway by which income inequality affects mortality. Affordability and accessibility of health care have received a great deal of policy attention. The provision of universal coverage was insufficient to offset broader economic and social changes. Hence, while major inroads could be made in reducing health inequality by providing universal coverage, this policy strategy will not come close to eliminating health inequalities, because the underlying incidence of disease, toxic exposure, and injury is the dominant force.

SES and behavior/lifestyle:

Behavioral factors account for about half of premature mortality, and almost all vary by socioeconomic status. The greatest behavioral risk for premature mortality is tobacco use. Those with less education and less income are more likely to smoke. Smoking prevalence reflects likelihood of initiating smoking as well as of quitting, and different polices are relevant for those stages of smoking. Low socioeconomic status is similarly

associated with more sedentary lifestyle and lower consumption of fiber and fresh fruits and vegetables. Patterns of alcohol use by socioeconomic status are more complex, as are the health risks related to alcohol. Moderate alcohol consumption is associated with lower mortality, while high levels of consumption increase mortality risk. Moderate drinking does not show an SES gradient, while heavy drinking is more common at lower SES levels. Health promotion efforts that are not targeted at the poor are likely to increase SES disparities, because they are used more readily by those with more resources to act on the information.

4.5 Determinants of Health — Poverty, Malnutrition and Environmental Issues

Due to its direct and indirect impact, health is one of the important determinants of the incidence of poverty as well as its persistence over time, known as “poverty traps”. The latter occur because, as we saw in the previous section, child health and nutrition are important factors that determine an adult’s level of education. Education, in turn, has a strong impact on income, and parent income and education affect the health and nutrition of their children. For a poverty trap to exist, several elements must be combined. The principal ones are 1) increasing returns on education (remuneration progressively increases for those who have higher education levels) and 2) a population that can clearly (and statistically) be divided in two groups, one with low human capital and another with high human capital. Health also generates returns in the adult population’s income, although the structure and magnitude of their returns would not by themselves generate a poverty trap. Instead, child nutrition and health play a pivotal role in poverty traps, since they establish the foundations of human capital investment, in particular, education. Using height to measure nutrition, it has been confirmed that this has substantial and possibly increasing returns for arriving at successive stages of the school term. When early childhood development is deficient due to shortcomings in education, health and parental income, children’s educational achievements are poor and the poverty trap is reinforced. Because the poverty trap is associated to the restrictions faced by poor households to accumulate human capital, it is also called a “human development trap”. Based on the evidence of positive and increasing returns from education, positive effects of education on child health, the presence of two statistically distinct groups in the distribution of human capital and the lack of autonomous investment in education for the lower The social determinants of health in poverty describe the factors that affect impoverished populations’ health and health inequality. Inequalities in health stem from the conditions of people’s lives, including living conditions, work environment, age, and other social factors, and how these affect people’s ability to respond to illness. These conditions are also shaped by political, social, and economic structures. The majority of people around the globe do not meet their potential best health because of a toxic combination of bad policies, economics, and politics. Daily living conditions work together with these structural drivers to result in the social determinants of health.

Poverty and poor health are inseparably linked. Poverty has many dimensions – material deprivation (of food, shelter, sanitation, and safe drinking water), social exclusion, lack of

education, unemployment, and low income – that all work together to reduce opportunities, limit choices, undermines hope, and, as a result, threatens health. Poverty has been linked to higher prevalence of many health conditions, including increased risk of chronic disease, injury, deprived infant development, stress, anxiety, depression, and premature death. These health afflictions of poverty most burden outlying groups such as women, children, ethnic minorities, and the disabled. Social determinants of health – like child development, education, living and working conditions, and healthcare- are of special importance to the impoverished. Socioeconomic factors that affect impoverished populations such as education, income inequality, and occupation, represent the strongest and most consistent predictors of health and mortality The inequalities in the apparent circumstances of individual's lives, like individuals' access to health care, schools, their conditions of work and leisure, households, communities, towns, or cities, affect people's ability to lead a flourishing life and maintain health, according to the World Health Organization. The inequitable distribution of health-harmful living conditions, experiences, and structures, is not by any means natural, but is the result of a toxic combination of poor social policies and programmes, unfair economic arrangements, and bad politics. Therefore, the conditions of individual's daily life are responsible for the social determinants of health and a major part of health inequities between and within countries. Along with these social conditions, Gender, education, occupation, income, ethnicity, and place of residence are all closely linked to people's access to, experiences of, and benefits from health care. Social determinants of disease can be attributed to broad social forces such as racism, gender inequality, poverty, violence, and war. This is important because health quality, health distribution, and social protection of health in a population affect the development status of a nation. Since health has been considered a fundamental human right, one author suggests the social determinants of health determine the distribution of human dignity

What links poverty and poor health?

Poverty and poor health worldwide are inextricably linked. The causes of poor health for millions globally are rooted in political, social and economic injustices. Poverty is both a cause and a consequence of poor health. Poverty increases the chances of poor health. Poor health, in turn, traps communities in poverty. Infectious and neglected tropical diseases kill and weaken millions of the poorest and most vulnerable people each year.

What other links are there between poverty and poor health?

The economic and political structures which sustain poverty and discrimination need to be transformed in order for poverty and poor health to be tackled.

Marginalized groups and vulnerable individuals are often worst affected, deprived of the information, money or access to health services that would help them prevent and treat disease.

Very poor and vulnerable people may have to make harsh choices – knowingly putting their health at risk because they cannot see their children go hungry, for example.

The cultural and social barriers faced by marginalized groups – including indigenous communities – can mean they use health services less, with serious consequences for their health. This perpetuates their disproportionate levels of poverty.

The cost of doctors' fees, a course of drugs and transport to reach a health centre can be devastating, both for an individual and their relatives who need to care for them or help them reach and pay for treatment. In the worst cases, the burden of illness may mean that families sell their property, take children out of school to earn a living or even start begging.

The burden of caring is often taken on by a female relative, who may have to give up her education as a result, or take on waged work to help meet the household's costs. Missing out on education has long-term implications for a woman's opportunities later in life and for her own health.

Overcrowded and poor living conditions can contribute to the spread of airborne diseases such as tuberculosis and respiratory infections such as pneumonia. Reliance on open fires or traditional stoves can lead to deadly indoor air pollution. A lack of food, clean water and sanitation can also be fatal.

The term malnutrition generally refers both to under-nutrition and over-nutrition, but in this guide we use the term to refer solely to a deficiency of nutrition. Many factors can cause malnutrition, most of which relate to poor diet or severe and repeated infections, particularly in underprivileged populations. Inadequate diet and disease, in turn, are closely linked to the general standard of living, the environmental conditions, and whether a population is able to meet its basic needs such as food, housing and health care. Malnutrition is thus a health outcome as well as a risk factor for disease and exacerbated malnutrition, and it can increase the risk both of morbidity and mortality. Although it is rarely the direct cause of death (except in extreme situations, such as famine), child malnutrition was associated with 54% of child deaths (10.8 million children) in developing countries in 2001; see also WHO, 2004). Malnutrition that is the direct cause of death is referred to as protein-energy malnutrition in this guide. Nutritional status is clearly compromised by diseases with an environmental component, such as those carried by insect or protozoan vectors, or those caused by an environment deficient in micronutrients. But the effects of adverse environmental conditions on nutritional status are even more pervasive. Environmental contamination (e.g. destruction of ecosystems, loss of biodiversity, climate change, and the effects of globalization) has contributed to an increasing number of health hazards, and all affect nutritional status. Overpopulation, too, is a breakdown of the ecological balance in which the population may exceed the carrying capacity of the environment. This then undermines food production, which leads to inadequate food intake and/or the consumption of non-nutritious food, and thus to malnutrition. On the other hand, malnutrition itself can have far-reaching impacts on the environment, and can induce a cycle leading to additional health problems and deprivation. For example, malnutrition can create and perpetuate poverty, which triggers a cycle that hampers economic and social development, and contributes to unsustainable resource use and environmental degradation. Breaking the cycle of continuing poverty and environmental deterioration is a prerequisite for sustainable development and survival. 1.2 Malnutrition in women and children The nutritional status of women and children is particularly important, because it is through women and their off-spring that the pernicious effects of malnutrition are propagated to future generations. A malnourished mother is likely to give birth to a low birth-weight (LBW) baby susceptible to disease and premature death, which only further

undermines the economic development of the family and society, and continues the cycle of poverty and malnutrition. Although child malnutrition declined globally during the 1990s, with the prevalence of underweight children falling from 27% to 22% a), national levels of malnutrition still vary considerably (0% in Australia; 49% in Afghanistan). Malnutrition commonly affects all groups in a community, but infants and young children are the most vulnerable because of their high nutritional requirements for growth and development. Another group of concern is pregnant women, given that a malnourished mother is at high risk of giving birth to a LBW baby who will be prone to growth failure during infancy and early childhood, and be at increased risk of morbidity and early death. Malnourished girls, in particular, risk becoming yet another malnourished mother, thus contributing to the intergenerational cycle of malnutrition.

The health impacts associated with damage to our environment are extensive and range from diarrhea and vector-borne diseases to respiratory diseases, ischemic heart disease and stroke to mental health impacts of extreme weather events, failing livelihoods, conflict and displacement. Damage to our natural environment contributes to almost a quarter of all deaths. A wide range of sectors and local, national and international policy makers must work together to introduce systemic and sustainable changes can reduce the health burden of environmental issues. Some issues, such as climate change, are more urgent than others. Without rapid mitigation, the IPCC expects a global mean surface temperature increase of 3.7-4.8 degrees Celsius by 2100. As future doctors who will be working in a world with a likely increase in disease and death associated with environmental factors, it is our responsibility to advocate for changes to protect human health and to prepare our workforce for environmental consequences we cannot avoid. The post-2015 sustainable development framework, in which health must be seen as a transcendent pillar, offers an opportunity that the world, including medical students, shall seize to create a healthy, more sustainable future for all.

The disease burden of a population, and how that burden is distributed across different subpopulations (e.g. infants, women), are important pieces of information for defining strategies to improve population health. For policy-makers, disease burden estimates provide an indication of the health gains that could be achieved by targeted action against specific risk factors.

4.6 Major Initiatives of The Government

The Constitution of India makes healthcare in India the responsibility of the state governments. It makes every state responsible for raising the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties. India has failed to reach its Millennium Development Goals related to health.[1] The definition of ‘access is the ability to receive services of a certain quality at a specific cost and convenience. The healthcare system of India is lacking in three factors related to access to healthcare: provision, utilization, and attainment. Provision, or the supply of healthcare facilities, can lead to utilization, and finally attainment of good health. However, there currently exists

a huge gap between these factors, leading to a collapsed system with insufficient access to healthcare.

Differential distributions of services, power, and resources have resulted in inequalities in healthcare access. Access and entry into hospitals depends on gender, socioeconomic status, education, wealth, and location of residence (urban versus rural). Furthermore, inequalities in financing healthcare and distance from healthcare facilities are barriers to access. Additionally, there is a lack of sufficient infrastructure in areas with high concentrations of poor individuals. Large numbers of tribes and ex-untouchables that live in isolated and dispersed areas often have low numbers of professionals. Finally, health services may have long wait times or consider ailments as not serious enough to treat.[1] Those with the greatest need often do not have access to healthcare. According to the World Bank, the total expenditure on health care as a proportion of GDP in 2015 was 3.89%. Out of 3.89%, the governmental health expenditure as a proportion of GDP is just 1% and the out-of-pocket expenditure as a proportion of the current health expenditure was 65.06% in 2015.

Public healthcare

Public healthcare is free/paid for those who are below the poverty line. The public health sector encompasses 18% of total outpatient care and 44% of total inpatient care. Middle and upper class individuals tend to use public healthcare less than those with a lower standard of living. Additionally, women and the elderly are more likely to use public services. The public health care system was originally developed in order to provide a means to healthcare access regardless of socioeconomic status. However, reliance on public and private healthcare sectors varies significantly between states. Several reasons are cited for relying on the private rather than public sector; the main reason at the national level is poor quality of care in the public sector, with more than 57% of households pointing to this as the reason for a preference for private health care. Most of the public healthcare caters to the rural areas; and the poor quality arises from the reluctance of experienced healthcare providers to visit the rural areas. Consequently, the majority of the public healthcare system catering to the rural and remote areas relies on inexperienced and unmotivated interns who are mandated to spend time in public healthcare clinics as part of their curricular requirement. Other major reasons are distance of the public sector facility, long wait times, and inconvenient hours of operation.

Private healthcare

Since 2005, most of the healthcare capacity added has been in the private sector, or in partnership with the private sector. The private sector consists of 58% of the hospitals in the country, 29% of beds in hospitals, and 81% of doctors. According to National Family Health Survey-3, the private medical sector remains the primary source of health care for 70% of households in urban areas and 63% of households in rural areas. The study conducted by IMS Institute for Healthcare Informatics in 2013, across 12 states in over 14,000 households indicated a steady increase in the usage of private healthcare facilities over the last 25 years for both Out Patient and In Patient services, across rural and urban areas. However, the high out of pocket cost from the private healthcare sector has led many households to incur Catastrophic Health Expenditure, which can be defined as health expenditure that threatens

a household's capacity to maintain a basic standard of living. Costs of the private sector are only increasing. One study found that over 35% of poor Indian households incur such expenditure and this reflects the detrimental state in which Indian health care system is at the moment. With government expenditure on health as a percentage of GDP falling over the years and the rise of private health care sector, the poor are left with fewer options than before to access health care services.

The following are the major problems of health services in India:

1. **Neglect of Rural Population:**

   A serious drawback of India's health service is the neglect of rural masses. It is largely a service based on urban hospitals. Although, there are large no. of PHC's and rural hospitals yet the urban bias is visible. According to health information 31.5% of hospitals and 16% hospital beds are situated in rural areas where 75% of total population resides. Moreover the doctors are unwilling to serve in rural areas. India has evolved one dependent on doctors giving it a top-heavy character.

2. **Emphasis on Culture Method:**

   The health system of India depends almost on imported western models. It has no roots in the culture and tradition of the people. It is mostly service based on urban hospitals. This has been at the cost of providing comprehensive primary health care to all. Otherwise speaking, it has completely neglected preventive, pro-motive, rehabilitative and public health measures.

3. **Inadequate Outlay for Health:**

   According to the National Health Policy 2002, the Govt. contribution to health sector constitutes only 0.9 percent of the GDP. This is quite insufficient. In India, public expenditure on health is 17.3% of the total health expenditure while in China, the same is 24.9% and in Sri Lanka and USA, the same is 45.4 and 44.1 respectively. This is the main cause of low health standards in the country.

4. **Social Inequality:**

   The growth of health facilities has been highly imbalanced in India. Rural, hilly and remote areas of the country are under served while in urban areas and cities, health facility is well developed. The SC/ST and the poor people are far away from modern health service.

5. **Shortage of Medical Personnel:**

   In India shortage of medical personnel like doctors, a nurse etc. is a basic problem in the health sector. In 1999-2000, while there were only 5.5 doctors per 10,000 population in India, the same is 25 in the USA and 20 in China. Similarly the number of hospitals and dispensaries is insufficient in comparison to our vast population.

6. **Medical Research:**

   Medical research in the country needs to be focused on drugs and vaccines for tropical diseases which are normally neglected by international pharmaceutical companies on account of their limited profitability potential. The National Health Policy 2002 suggests

to allocate more funds to boost medical research in this direction.

7. Expensive Health Service:

In India, health services especially allopathic are quite expensive. It hits hard the common man. Prices of various essential drugs have gone up. Therefore more emphasis should be given to the alternative systems of medicine. Ayurveda, Unani and Homeopathy systems are less costly and will serve the common man in better way.

Good health and well-being of the population are both means and ends to a country's development trajectory. Sound health is a necessary prerequisite for the workforce to be able to contribute to economic growth. Therefore, improving health outcomes continues to be a policy priority for all countries, including India. Home to almost one-sixth of the global population which is growing at a decadal rate of about 17.7 %, India has emerged as a forerunner in economic growth, gaining global importance.

The National Health Policy was endorsed by the Parliament of India in 1983 and updated in 2002 and then in 2017. The recent four main updates in 2017 mentions the need to focus on the growing burden of the non-communicable diseases, on the emergence of the robust healthcare industry, on growing incidences of catastrophic expenditure due to health care costs and on rising economic growth enabling enhanced fiscal capacity. In practice, however, private healthcare sector is responsible for the majority of healthcare in India, and most healthcare expenses are paid out of pocket by patients and their families, rather than through insurance. Government health policy has thus far largely encouraged private sector expansion in conjunction with well-designed but limited public health programmes.

Even though " Public Health and Sanitation, Hospitals and 'Dispensaries' is a state subject and 'Family Welfare, Medical Education' find places in the Concurrent List (Seventh Schedule, Article 246, Constitution of India), historically, the centre has guided health interventions in the country and implemented structural reforms in the sphere. The current government, ever since it came to power, has provided traditional practices now called AYUSH. With its approach firmly grounded in the philosophy of *Sabka Saath, Sabka Vikas*, the NDA government has transformed the health care sphere through a holistic package of policies that remove inequities and create a system that is 'universally acceptable, affordable and effective'.

MAJOR HEATH CARE INITIATIVES:

Swachh Bharat Mission (SBM): Promoting Cleanliness and Making India Open defecation Free:

Launched on 2nd October 2014, the SBM strives to clean surrounding across the country and make it open defecation free (ODF) by 2 October 2019 as a tribute of Mahatma Gandhi on his 150th birth anniversary. *Swachh Bharat Mission Dashboard, May 2018* has brought to light that, to date, 7.26 crore toilets have been constructed across the country since October 2014, and 3.6 lakh villages, 2212 cities and seven states/ territories have been declared open defecation free. Sanitation coverage has increased from 38% in 2014 to 83 % in 2018.

The SBM has received global attention. The National Annual Rural Sanitation Survey (NARSS) 2017-18 has confirmed that 93.4 % of the rural households with access to toilets were found to be using them regularly. This is a significant achievement. UNICEF commissioned by the

Ministry of Drinking Water and Sanitation to assess the economic impact of the Swachh Bharat Gramin in rural areas articulates that prevalence of diarrhoea has come down.

National Health Policy 2017: A New Healthcare Dawn:

After a long 14-year hiatus, the new Health Policy (NHP) 2017 was introduced by the NDA government. The earlier national health policies of 1983 and 2002 did serve the nation well, but were fast changing its relevance in the wake of shifting health priorities. For example,, a persistent threat of. new and re-emerging infectous diseases like HINI, Ebola Virus and Nipah Virus has appered on the stage. The current government took charge of overhauling the healthcare ecosystem in the country by customizing the international best practices to match Indian needs. NHP 2017 envisages greater engagement of the private sector and for critical gap-filling and achievement of health goals. It also boosts 'Make in India' initiative by incentivizing local manufacturer to produce tailored indigenous products to serve the Indian population.

The NHP 2017 marks a paradigm shift in the health care system of India. Its aim to enable the attainment of highest possible level of well-being for all groups of people through universal access to good quality health care services, improved quality and lower costs of health care delivery. Additionally, the NHP—2017 provides a boost to the domestic health care industry.

Mission Indradhanush and Intensified Mission Indradhanush: Expanding the Immunization Cover to Children and Pregnant women:

After Mission Indradhanush, the government has further introduced Intensified Mission Indradhanush (IMI) in October 2017 in select districts and urban areas of the country to achieve the target of more than 90 % coverage. IMI strives to cover all left-outs and drop-outs in select districts and urban areas, with low routine immunization coverage.

Pradhan Mantri Bharatiya Janaushadhi Pariyojana (PMBJP) and Affordable Medicines and Reliable Implants for Treatment (AMRIT): Reducing Inequities and Providing Affordable Healthcare for All:

Often called the 'Pharmacy of the world', India is the largest producer of genetic drugs in the world, accounting for 20 % of the global exports in terms of volume as per the report of the *Indian Brand Equity Foundation, 2018*.

In line with current government's objective of ' ensuring availability of quality medicines at affordable prices to all' and reducing out-of—pocket healthcare expenditure by the people, the government has committed to make reasonably priced genetic drugs accessible to the population.

Ayusman Bharat for a New India 2022: Holistic Healthcare to the doorstep of 10 crore Poor and Vulnerable Families:

This is a flagship scheme announced in 2018-19 budget that covers both preventive and promotive healthcare through path –breaking interventions at the primary, secondary as well as tertiary levels of care. It consists of two initiatives: health and wellness centres and National Health Protective Scheme (NHPS).

Initiatives to improve the Outreach of Medical Education:

As per the WTO recommendations, there should be at least one doctor per 1,000 populations in an area. In line with this, the government, in Union Budget 2018-19, has announced

setting up of 24 new government medical colleges and hospitals by upgrading existing district hospitals in the country.

National Nutrition Mission : Towards Creating a 'Suposhit' Bharat:

Rashtriya POSHAN Abhiyaan (National Nutrition Mission) is a flagship programme of the Ministry of Women and Child Development (MWCD), Government of India with three year budget of 9046.17 crore rupees.

Commencing from 2017-18, NNM has been set up with a comprehensive approach towards raising nutrition level in the country and will be implemented across all districts in a phased manner. There are several earlier initiatives by the then government to improve the nutritional status of children, pregnant women and lactating mother; but this new mission provides a coverge framework to tap synergies among various schemes to curb malnutrition in the country. The goal is to reduce stunting, under- nutrition, anemia (among young children, women and adolescent girls) and reduce low birth weight by 2%, per year and anemia by 3% per year, with the ultimate objective to bring down rates of stunting to 25% by the year 2022.

4.7 Conclusion

Health economics is concerned with the alternative uses of resources in the health services sector and with the efficient utilization of economic resources such as Human resource, material and financial resources. The importance of health care in modern day society can be gauged from the fact that good health is recognized as one of the fundamental rights of an individual. So much so, that out of the eight recognized millennium development goals of the United Nations, health finds its place in three of them (United Nations, 2000). The enormity of the health issues around the world especially in the developing and poor countries is well documented. A comparison of the basic health indicators clearly indicates that developed nations of the world, fare far better on healthcare provision and utilization, when compared to the developing nations. This is evident from the figures shown in the World Health Statistics, released by World Health Organization (WHO) in 2012. For example, in a developed country like Germany, the government shares 77% of all the national expenses made on health. Similar figures for a developing country like India stands at 30.3%. This shows that out of pocket expenditures on healthcare are extremely high in India and this creates a huge financial burden on its citizens. Studies have revealed that every year many individuals in India are driven to poverty purely due to the huge medical expenses that are borne out of one's own pocket.

Today, various government bodies, both at the national and the state level, are making concerted efforts to improve the healthcare scenario in the country. However, there still remain stiff challenges at the policy as well as execution level which are roadblocks on the path to achieve the health related goals. Genesis of these challenges to a large extent can be found in the characteristics of the healthcare services in India and the related utilization1 patterns of these services. In this backdrop, the role of healthcare services providers becomes very vital as they are a key element in determining the provision of these services and

influencing the usage patterns by the general population. Hence, to improve the overall health scenario it becomes important to understand the part played by various providers of healthcare services in India.

Based on the characteristics of the service providers, healthcare services can be broadly classified as public and private. Public healthcare services are those healthcare services that are provided by government owned or controlled entities whereas private healthcare services are the ones provided by privately owned or controlled entities. Almost twenty two percent of the population in India is believed to be below the poverty line; therefore, the cost of treatment is a major factor in utilization of healthcare services. Since public healthcare services are lower in the cost aspect when compared to the private healthcare services, they play a very important role in providing affordable healthcare services to the Indian society.

4.8 Key Terms Simplified

Adverse selections: A situation often resulting from asymmetric information in which individuals are able to purchase insurance at the rates that are below actuarially fair rates plus loading costs. An event in healthcare whereby one party decides not to reveal the full extent of their risk profile to the other party for example insurance model.

Asymmetric information: Situations in which the parties on the opposite sides of transaction have differing amounts of relevant information. Doctors have more knowledge and information about medicine than patients /consumers, the individual may not be the best judge of his/ her own interests, the doctor acts as an agent of the patients demand.

Moral hazard: the possibility of consumers or providers exploiting a benefit system unduly to the disadvantages of other consumers, providers or the financing community as a whole.

Efficiency refers to obtaining the greatest output for a given set of resources.

Pareto efficiency: Also called *allocative* efficiency it defines a criterion for judging different allocations of resources to different uses which might be widely acceptable. (Whether it is widely acceptable or not is debated, but that debate is beyond our aims here.) It asserts that we would be able to say that one state of the world is better than another if at least one person is better off under the first state compared with the alternative and no-one is worse off. This is called the *Pareto criterion*. If we change from one allocation of resources to another, for example changing the health care system in terms of the kind of care that is made available, and as a result some people get better care and no-one gets worse care, this is described as a *Pareto improvement*. If it is not possible to make any Pareto improvements, then we have achieved a *Pareto optimum*. A Pareto optimum is therefore a position where it is not possible to make anyone better off without making someone else worse off.

Equity refers to a fair distribution of that output amongst the population.

Horizontal equity means the equal treatment of equals; for example, do people who have the same health needs have equal access to health care?

Vertical equity means the unequal treatment of unequals; for example, do people who have

worse levels of health have greater access to health care?

Living Condition: circumstances of a person's life—shelter, food, clothing, safety, access to clean water, include structural features of neighborhoods such as facilities, recreational opportunities, services, urban and traffic environments, and general safety, as well as the quality of housing and the physical environment, can obviously be seen as fundamental causes of health and disease

Physical environment: It refers to the built environment (e.g., green space, housing stock, transportation networks, etc.), pollution, noise, traffic congestion, and the geological and climate conditions of the area the city/village occupies. The built environment refers to housing form, roads and footpaths, transport networks, shops, markets, parks and other public amenities, and the disposition of public space. Recent studies have suggested that poor-quality built environments are associated with depression, drug overdose, and physical activity.

Illness: Illness is a broad term that defines the poor state of mind, body, and, to a certain extent, spirit. It is the general feeling of being sick or unwell (outside the person's belief of good health). There are very subtle distinctions between disease and illness. Disease refers to the affliction of a specific organ or the entire body due to a harmful microorganism such as bacteria or virus, injury, chemical imbalances in the body, exposure to toxins, and production of immature cells. Examples of diseases are cancer, fractures, diabetes, cirrhosis, and psoriasis, among others. The same thing goes for mental health issues such as bipolar disorder, clinical depression, and schizophrenia.

Illness, on the other hand, is the reaction of the body to the disease. It represents fatigue, fever, muscle weakness, or blurred vision, as well as abnormal blood pressure and a rapid heart rate. It should be noted though that illness, or the feeling of being unwell or sick, can occur even without a disease. Another distinction between a disease and an illness is its specificity. A disease is based on specific factors or criteria that doctors are looking for when a patient goes into the clinic or hospital to be examined. An illness, meanwhile, can refer to any disease. Also, because it's largely a feeling, it can be different among patients.

Sanitation: Sanitation refers to public health conditions related to clean drinking water and adequate treatment and disposal of human wastes and sewage.

Social Exclusion: It is a form of discrimination. It occurs when people are wholly or partially excluded from participating in the economic, social and political life of their community, based on their belonging to a certain social class, category or group.

Chronic Disease: A chronic disease is one lasting three months or more. Chronic diseases generally cannot be prevented by vaccines or cured by medication, nor do they just disappear A few examples of such diseases are heart disease, cancer, diabetes, stroke, and arthritis.

Working Condition: are the demands, environment and terms of a job that influence the satisfaction of employees. Firms may compete to offer attractive conditions as a means to attract and retain talent. The law in many jurisdictions also defines a minimum set of working conditions that employers must provide.

Occupational health: Occupational health refers to the identification and control of the risks arising from physical, chemical, and other workplace hazards in order to establish and maintain a safe and healthy working environment. These hazards may include chemical agents and solvents, heavy metals such as lead and mercury, physical agents such as loud noise or vibration, and physical hazards such as electricity or dangerous machinery. Environmental justice: This refers to the role of the social environment in determining exposure to toxic contaminants.

Marginal analysis: An examination of the additional benefi ts or costs arising from an extra unit of consumption or production of a 'good'.

Market: A situation where people who have a demand for a good come together with suppliers and agree on a price at which the good will be traded. A necessary condition for properly functioning markets is a system of property rights to ensure that people can participate in good faith.

Opportunity cost (economic cost): As resources are scarce, an individual, in choosing to consume a good, in principle, chooses the good which gives one the greatest benefit, and thus forgoes the consumption of a range of alternative goods of lesser value. The opportunity cost is the value of the benefit of the next best alternative.

Resources: These represent inputs into the process of producing goods. They can be classified into three main elements: labour, capital and land. Different goods would generally require varying combinations of these elements. Resources are generally valued in monetary terms.

Utility: The happiness or satisfaction an individual gains from consuming a good. The more utility an individual derives from the consumption of a good, all else being equal, the more they would be willing to spend their income on it.

Welfare (or social welfare): The economic criterion on which a policy change or intervention is deemed to affect the well-being of a society. In general, this is assumed to be determined by aggregation of the utilities experienced by every individual in a society**.**

WHO: The World Health Organization (WHO) is a specialized agency of the United Nations that is concerned with international public health. Its primary role is to direct international health within the United Nations' system and to lead partners in global health responses. It was established on 7 April 1948, and is headquartered in Geneva, Switzerland.

4.9 Questions with Answer Hints

Questions Carrying 2.5 marks

1. What do you mean by economics of health?

   [Answer: See first paragraph of section 4.2]

2. State the need for health care.

   [Answer: See second paragraph of section 4.2]

3. Why is health care considered an economic good?
   [Answer: See ninth paragraph of section 4.2]
4. Define equity.
   [Answer: See eleventh paragraph of Section 4.2]
5. Define SES.
   [Answer: See first paragraph of Section 4.4]
6. What are the four roles people take in health care?
   [Answer: See last paragraph of Section 4.2]

Questions Carrying 5 marks

1. Distinguish between equity and equality in health care.
   [Answer: See eleventh paragraph of Section 4.2]
2. What are the social determinants of health?
   [Answer: See first paragraph of Section 4.5]
3. Discuss the criteria for equity in health care.
   [Answer: See last paragraph of Section 4.2]
4. Discuss the criteria of efficiency in health care
   [Answer: See last paragraph of Section 4.2]
5. State the objectives of National Health Policy in India.
   [Answer: See last paragraph of Section 4.6]

Questions Carrying 10 marks

1. Write a short note on economics of heath.
   [Answer: See Section 4.2]
2. Discuss how development is related to health.
   [Answer: See Section 4.3]
3. Discuss the relation of health with SES.
   [Answer: See Section 4.4]
4. Write a short note on determinants of health.
   [Answer: See Section 4.5]
5. Discuss the major initiatives of GOI for health care.
   [Answer: See Section 4.6]

4.10 REFERENCES

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UNIT 5 ■ Demography and Development

Structure

5.1 Objectives

After reading this unit, you will be able to:

- know the concept of demography;
- understand importance of demography;
- know theory of fertility decline;
- keep acquainted to theory of demographic transition;
- know the concept of demographic dividend; and
- learn importance of demographic dividend in context of India.

5.2 Introduction

Demographics can be termed as the study of the dynamics of populations. It is an essential tool for governments and other types of organizations in the decision making process because it helps to forecast potential problems in the future and implement more relevant policies.

For example, if we can produce enough foods for only X billion people, and the current evolution of world population is expected to get over this threshold, then we can foresee the future problem and implement and adapt suitable policies from now on. It is an very interesting multidisciplinary field where can study pretty much any world phenomenon and issue, and come up with possible solutions, because at the end the people (population) are the base of everything in our world, may it be environmental issues, innovation, wars, inequalities, education, economics etc.

Anyone who wants to relate to a community (or larger group of people) needs to have information about that community. This is especially true of businesses, governments, policy makers and economist. To serve a group of people, they have to know about them. In order for effective decisions to be made about dealing with any group of people the group is analyzed and studied. This data that is analyzed is demographic data. It is for this reason our founding fathers recognized its importance and created a provision in the constitution that required a decennial census for the most basic demographic question: how many people live in a particular area? This is absolutely essential in order for a representative form of government to exist.

The importance of demography lies in its contribution to helping government and society better prepare to deal for the issues and demands of population growth, aging and migration. The statistics and predictions resulting from demographic studies can, for example, aid in the development of adequate school systems, estimate the required funding for senior services and develop workable healthcare systems. A wide variety of social outcomes are impacted by demographic processes and distributions. The analyses derived from demographic studies rely upon a specialized set of models and methods, including population composition studies, life table analysis, simulation and mathematical models, survival analysis and ratios. Demography lies at the crossroads of several other disciplines, including economics, sociology and epidemiology.

5.3 The Concept of Demography

The word 'Demography' is a combination of two Greek words, 'Demos' meaning people and '*Graphy*' meaning science. Thus demography is the science of people. During the time of Confucius, many Chinese and Greek writers, and following them Aristotle, Plato and Kautilya (around the year 300 B.C.) have expressed their thoughts on the subject of population. Thus, as a subject, population education is as old as human civilization. More precisely demography can be termed as the study of the characteristics of human populations**.** It is the scientific study of human populations, primarily with respect to their size, their structure and their development. In other words, it is the numerical portrayal of human population. All these definitions take a narrow view because they emphasise only the quantitative aspects of demography. Some other writers have defined demography in wide sense by taking the quantitative and qualitative aspects of population studies. In broad sense, demography includes both demographic analysis and population studies. A broad study of demography studies both qualitative and quantitative aspects of population. It is the study

of size, territorial distribution and composition of population, changes therein, and the components of such changes, which may be identified as mortality, territorial movement (migration), and social mobility (change of status).These definitions take into view not only the size, composition and distribution of population and changes in them in the long run but also imply human migration and change in the status of population through education, employment, social status, etc.

Scope of Demography:

The scope of demography is very wide and is discussed under the following heads:

- Subject Matter of Demography:

  The study of demography encompasses the following:

  a. Size and Shape of Population:

  Generally, the size of population means the total number of persons usually residing in a definite area at a definite time. The size and shape of population of any region, state or nation are changeable. It is because every country has its own unique customs, specialities, social-economic conditions, cultural atmosphere, moral values, and different standards for acceptance of artificial means of family planning and availability of health facilities, etc. All these factors affect the size and shape of the population and if these factors are studied with reference to any area under demography, we can clearly understand the role they play in determining the shape and size of the population.

  b. Aspects Related to Birth Rate and Death Rate:

  Birth rate and death rate are the decisive factors that influence the size and shape of the population and therefore their importance in population studies is crucial. In addition to these, factors like marriage rate, belief regarding social status and marriage, age of marriage, orthodox customs related to marriage, early marriage and its effects on the health of the mother and the child, child infanticide rate, maternal death, still birth, resistance power, level of medical services, availability of nutritious food, purchasing power of the people, etc. also affect the birth and death rate.

  c. Composition and Density of Population:

  In the subject matter of demography, the study of composition and density of population is important. In the composition of population factors like the sex ratio, race wise and age- group wise size of population, the ratio of rural and urban population, distribution of population according to religion and language, occupational distribution of population, agricultural and industrial structure and per sq. km. density of population are very important. With this type of information regarding the possibilities of development in that particular area, social-economic problems of the area, problems created due to increase in urban population, and density of population form part of population studies.

d. Socio-Economic Problems:

Out of the many problems relating to population growth, the effects of high density due to industrialization in the urban areas are of more importance as they affect the socio-economic life of the people. Problems like slum areas, polluted air and water, crime, addiction to liquor, juvenile delinquency, and prostitution, are also important subjects of study in demography.

e. Quantitative and Qualitative Aspects:

Along with the quantitative problems of population, the qualitative problems also form part of population studies. Moreover, the study of demography includes the availability of physicians in the total population, number of hospitals, the number of beds in hospitals, expectation of life at birth, daily availability of minimum calories, resistance power, advertisement of family planning programme and its development, the changes brought in the attitudes of people regarding child birth and adequate medical facility for delivery, etc.

- Distribution of Population:

  This includes:

  (a) How people are distributed among and within continents, world regions and developed and underdeveloped countries?

  (b) How their numbers and proportions change?

  (c) What political, social and economic causes bring changes in the distribution of population? Within a country, it also includes the study of distribution of population in rural and urban areas, fanning and non-farming communities, working classes, business communities, etc.

  Migration plays an important role in the distribution of population and supply of labour. Demography studies the factors that lead to internal and external migration of people within a country and between countries, the effects of migration on the migrants and the place where they migrate. Urbanization is another factor in the distribution of population within the country. The focus in population studies is on factors responsible for urbanisation, the problems associated with urbanisation and the solutions thereto. Similarly, theories of migration and urbanisation form part of the study of demography.

- Theoretical Models:

  There are vast theoretical aspects of population studies which include the various theories of population propounded by sociologists, biologists, demographers and economists, and theories of migration and urbanisation.

- Practical Aspects:

  Practical aspects of population studies relate to the various methods of measuring population changes such as the census methods, age pyramids, population projections, etc.

- Population Policy:

  Population policy is an important subject of demography especially in the context of developing countries. It includes policies for population control, and family planning strategies; reproductive health, maternal nutrition and child health policies; policies for human development of different social groups, etc., and the effects of such policies on the total population of the country.

- Micro versus Macro Study:

  The true scope of demography relates to whether it is a micro or macro study.

  Micro demography is the narrow view of population studies. Among others, Hauser and Duncan include the study of fertility, mortality, distribution, migration, etc. of an individual, a family or group of a particular city or area or community. Micro demography is the study of the growth, distribution and redistribution of the population within community, state, economic area or other local area. According to the micro view, demography is primarily concerned with quantitative relations of demographic phenomena. However, majority of writers take the macro view of population studies and include the qualitative aspects of demography. To them, demography includes the interrelationships between population and social, economic and cultural conditions of the country and their effects on population growth. It studies size, composition and distribution of population, and long run changes in them. Why migrations take place and what are their effects? What leads to urbanisation and what are its consequences? All these form part of macro aspects of population studies which also include unemployment, poverty and policies relating to them; population control and family welfare; and theories of population, migration and urbanisation, etc. it is the mathematical and statistical study of the size, composition, and spatial distribution of human population and of changes over time in these aspects through the operations of the five processes of fertility, mortality, marriage, migration and social mobility. It maintains a continuous descriptive and comparative analysis of trends, in each of these processes and in their net result. Its long run goal is to develop theories to explain the events that it charts and compares.

- Balanced View:

  A balanced view of population studies do not believe in dividing the study of demography into two separate micro and macro divisions. According to this view the scope of demography should include both micro and macro aspects of population. It should relate to fertility, mortality, information about female population, their health, marital status, distribution and classification of population according to occupation, and collection and study of information about social and economic condition, and migration of population.

Demography as a Science:

A science is a systematised body of knowledge ascertainable by observation and experimentation. It is a body of generalisations, principles, theories or laws which traces out a causal relation between cause and effect.

For any discipline to be a science:

(i) It must be a systematised body of knowledge;

(ii) It must have its own laws or theories;

(iii) They can be tested by observation and experimentation;

(iv) They can make predictions;

(v) They can be self-corrective; and

(vi) Have universal validity.

Demography possesses all the above noted elements of a science which can be described as under:

1. It is a systematised body of knowledge in which facts are studied and analysed in a systematic manner.
2. It has its own theories like the Malthusian Theory, the theory of Demographic Transition, etc.
3. These theories have been tested on the basis of observation.
4. Demography can make predictions on the basis of cause and effect relationships. It can predict about changes in population.
5. Demography is self-corrective in nature. It goes on revising its conclusions in the light of new facts based on observations.
6. The principles of demography have universal validity as they are applicable to all countries, given the same conditions.

Thus on all counts, demography is a science. It is not only a positive science of what is but also a normative science of what ought to be. It studies the causes and effects of population problems and also suggests policy measures to solve them.

Thus, with improved data, new techniques and precise measurement of the demographic transition that is occurring, demography has become a science. In fact, it has become an applied science and applied technology.

Importance of Demography:

With the majority of developing countries facing population explosion, the study of population and its problems has become very important in every sphere of an economy.

(1) For the Economy:

The study of demography is of immense importance to an economy. Population studies help us to know how far the growth rate of the economy is keeping pace with the growth rate of population. If population is increasing at a faster rate, the pace of development of the economy will be slow. The government can undertake appropriate measures to control the growth of population and to accelerate the development of the economy. Rapid population growth reduces per capita income, lowers the standard of living, plunges the economy into mass unemployment and under employment, brings

environmental damage and puts a burden on existing social infrastructure. Population studies highlight these problems of the economy to be solved by the government.

(2) For Society:

Population studies have much importance for the society. When population is increasing rapidly, the society is faced with innumerable problems. Shortages of basic services like water, electricity, transport and communications, public health, education, etc. arise. Along with these, problems of migration and urbanisation are associated with the growing population which further led to the law and order problem. Faced with such problems which are the concomitant result of population growth, the state and non-government social organisations can adopt appropriate measures to solve them.

(3) For Economic Planning:

Data relating to the present trend in population growth help the planners in formulating policies for the economic plan of the country. They are kept in view while fixing targets of agricultural and industrial products, of social and basic services like schools and other educational institutions, hospitals, houses, electricity, transport, etc. Population data are also used by the planners to project future trends in fertility and to formulate policy measures to control the birth rate. Based on population data, projections are made about the increase in labour force and the number of people in the age-groups 1-15 years, 15-50 years and above in order to estimate the labour force available for productive employment. This, in turn, helps in making estimates regarding employment to be generated during the plan period.

(4) For Administrators:

Population studies are also useful for administrators who run the government. In under-developed countries, almost all social and economic problems are associated with the growth of population. The administrator has to tackle and find solutions to the problems arising from the growth of population. They are migration and urbanisation which lead to the coming up of shanty towns, pollution, drainage, water, electricity, transport, etc. in cities. These require improvement of environmental sanitation, removal of stagnant and polluted water, slum clearance; better housing, efficient transport system, clean water supply, better sewerage facilities, control of communicable diseases, provision of medical and health services, especially in maternal and child welfare by opening health centres, opening of schools, etc.

(5) For Political System:

The knowledge of demography is of immense importance for a democratic political system. It is on the basis of the census figures pertaining to different areas that the demarcation of constituencies is done by the election commission of a country. The addition to the number of voters after each election helps to find out how many have migrated from other places and regions of the country. Political parties are able to find out from the census data the number of male and female voters, their level of education, their age structure, their level of earning, etc. On this basis, political parties can raise issues and promise solutions in their election manifestos at the time of elections

Thus, demography is very useful for understanding social and economic problems and identifying potential solutions. Demographers are engaged in social planning, market research, insurance forecasting, labour market analysis, economic development and so on. They work for private firms and public agencies at local, regional, national and international levels.

5.4 Fertility Decline

A significant issue relating to population growth is what determines fertility rate on which birth rate of a country depends. The second important issue is how economic development affects birth rate and death rate and thereby determines population growth. This issue is dealt with in the theory of demographic transition. The third important issue is how population growth affects economic development, especially in developing countries. While population growth by causing increase in workforce helped economic growth in the presently developed countries, in case of labour-surplus developing countries such as India far from helping economic development retards it.

The other important issue is how population growth is responsible for the increase in the magnitude of poverty in developing countries and also causes environmental degradation. The last issue is what measures should be adopted in developing countries to check population growth rate so that economic development be speeded up. An important aspect of population, especially in case of India, is the beneficial effect of change in composition of population toward the higher ratio of young population to the total population which is described as population dividend.

To explain the changes in birth rate witnessed during demographic transition, especially fall in the birth rate in stage 3 of the demographic transition with the development of the economy, economists have used the microeconomic theory of family fertility.

According to the neoclassical theory of consumer's behaviour, to maximise his satisfaction from consumption of goods, children are treated as normal goods in this analysis of family fertility. As in case of demand for other goods economists use indifference curves between demands for children and all other goods and budget constraint to explain the family fertility.

For explaining demand for surviving children and therefore fertility, like the demand for other goods, the following function is employed –

$$C_d = f\ (Y, P_C, P_X, t_X),\ x=1,\ldots n$$

where C_d represents demand for serving children; Y represents level of family income; P_C is net price of children which is the difference between the anticipated cost of children (which includes the direct cost of upbringing of a child and opportunity cost of a working mother's time) on the one hand and benefits (which may consist of potential child income and age old support) on the other P_X stands for price of all other goods, t_X stands for tastes or preferences for other goods relative to having children.

In Fig. 1 and 2 graphically represents the theory of fertility. In these figures along the horizontal axis we measure the number of children desired (C_d) and along the vertical axis we measure the demand for other goods by the parents which we write G_p. Families desires and preferences between demand for children (C_d) and other goods (G_p) are shown by a set of indifference curves, IC_1, IC_2, IC_3. Each indifference curve is a locus of various combinations of children and other goods which give the same amount of satisfaction to the parents and the higher the indifference curve, the greater the satisfaction of the parent.

The family's capacity to buy the alternative combinations of goods and children is represented by the budget constraint line AB. Note that the budget constraint line AB is determined by the perceived income by the family and prices of goods and children. The price of children is determined by the costs of upbringing of children.

These costs are of two types:

(1) Direct cost of rearing children and as they need to be fed, clothed, kept in good health, given some education, and

(2) Indirect costs which are the opportunity cost of women who look after their children and these opportunity costs are income forgone by the working women during the time they spend for bringing up their children.

It is worth mentioning that steeper the budget constraint line (i.e., the greater its slope), the higher the price of children relative to goods. Now, according to the fertility theory based on neoclassical indifference curve demand theory, from the available combination of goods and children lying on the budget constraint line the family will choose a combination that maximizes its subjective satisfaction. In Fig. 1 it will be seen that such a satisfaction-maximizing combination is represented by the tangency point E on the budget constraint line AB. At point E, the family demands C_1 children and G_1 other goods.

Now, if family's income increases, budget constraint line shifts outward, say to dotted A'B '. Now, new budget constraint line A'B' is tangent to higher indifference curve IC_3 at point R and is demanding C_2 children and G_2 goods. This is not surprising as children in the fertility theory are treated as a normal good whose demand increases as income increases. This is particularly relevant for poor countries where children are often demanded as a source of financial security or support.

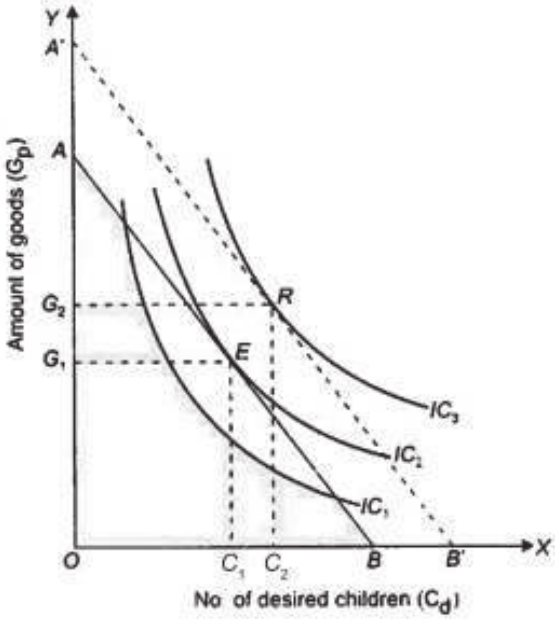

Figure:1

Rise in Cost of Children:

Suppose there is a rise in opportunity cost of children as female member is a working woman who will have to take the responsibility of bringing up the children and therefore she has to forgo her income in the process of upbringing of children. With the rise in opportunity cost of children, budget constraint line will rotate from AB to AD in Fig. 2 and the family moves from equilibrium point E on indifference curve IC_2 to the equilibrium at point F on lower indifference IC_1 and is now demanding C_1 number of children and G_1 amount of goods; $C_1 < C_3$ .That is, with the rise in opportunity cost of children, the family is demanding fewer children. This is an important conclusion from the theory of fertility which has been found to be true by empirical evidence. For example, in the State of Kerala where women are quite literate and are employed, the birth rate is lower as compared to other States of India.

Now, suppose there is simultaneous increase in family's income (say, rise in wages) and rise in opportunity cost of children as a result of expansion in employment for women. This will cause both an outward shift and downward rotation of the budget constraint line. In Fig 2 to obtain such a budget line we draw a new budget line RT parallel to the rotated budget line AD at a distance equal to the increase in income.

It will be seen from Fig. 2 that the new budget constraint line RT depicting both the increase in income and rise in opportunity cost of children is tangent to indifference curve IC_3 at point H at which family demands or desires OC_2 number of children which are fewer than OC_3 prior to increase in income and rise in opportunity cost of children. Further, at new equilibrium at point H on higher indifference curve IC_3, the family is consuming more amounts G_3 of goods which make it better off than before.

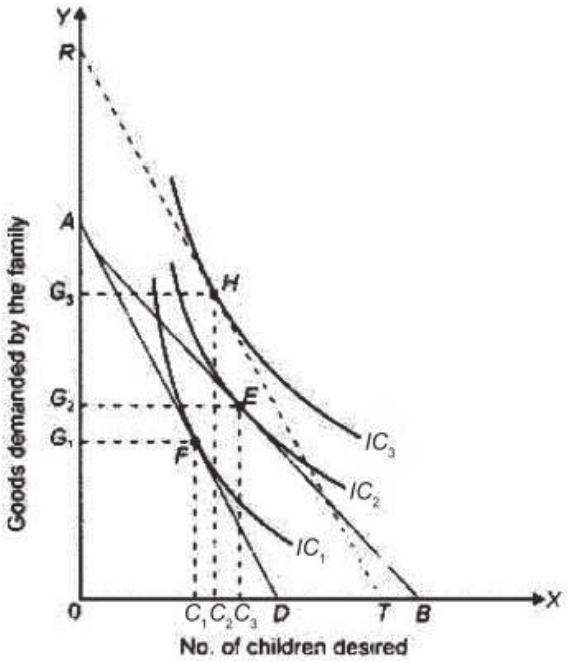

Figure: 2

Besides, it may be noted that as income of the family increases the parents may like to spend more on each child for providing them better education and keeping then well-nourished and healthy and this would also cause the parents to prefer to have a fewer children.

It is worth mentioning that the conclusions of economic theory of fertility explained above are in conformity with the theory of demographic transition according to which in the third stage of demographic transition birth rate falls coupled with already falling death rate brings down the rate of growth of population.

From the economic theory of fertility as applied to developing countries, it can be seen that the price or cost of children rises as a result of, say increased educational and employment opportunities for women or a rise in school fees or the establishment of minimum-age child labour laws or the provision of publicly financed old-age social security schemes, parents will demand fewer additional children substituting, perhaps, quality for quantity or a mother's employment income for her child rearing activities. It follows that one way to induce families to desire fewer children is to raise the price of child rearing, say, by providing greater educational opportunities and a wider range of higher-paying jobs for young women.

5.5 Theory of Demographic Transition

The demographic transition is the name given to the shift from stable population at high birth and death rates to one at low birth and death rates. A simplified version of those changes

is shown in Figure 9. Increase in the rate of population growth is solely caused by the fall in the death rate. A constant birth rate and a declining death rate are sufficient to account for population growth rates of a high as 3% per annum as experienced by a number of countries.

In the last century, declines in death rates in Europe and the United States were associated with increases in income. Improvements in health care were paid for by individuals and by the public treasury out of incomes made higher by economy-wide changes in productivity. Due to this connection, various models of economic and demographic change have made death rates depend on income. Kindleberger has shown that lower death rates no longer depend so closely on increases in national income. The discovery of very low cost technology to reduce disease and death (e.g., spraying DDT for malaria) and opening international assistance in this regard imply that the death rate can fall very rapidly in poor countries without a pre-vious or simultaneous rise in per capita incomes.

The vertical distance between birth and death rates Fig. 3 shows the speed with which population grows. It is greatest when a society finds itself between stages II and III. Birth rates begin to decline, and the rate of decrease in death rates slows as time goes on.

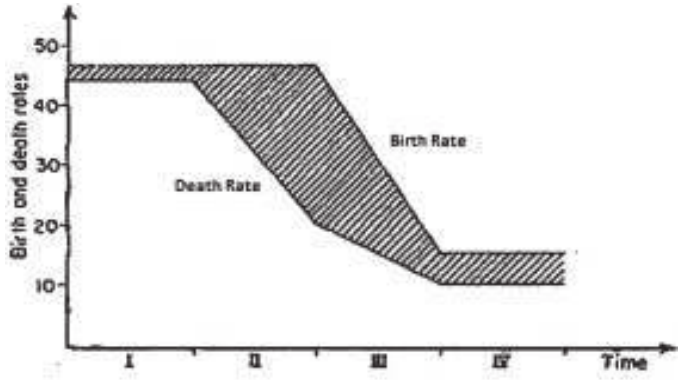

Figure :3

For obvious reasons, changes in birth rates are correlated with increases in urbanisation, industrialisation, educational attainment, and emancipation of womenfolk as well as sharply lower costs of effective and convenient methods of birth control. Once again, historical statistics indicate a correlation present between higher incomes and lower birth rates. But, in countries where urbanisation has not led to generally higher incomes and where contraceptive technology has changed radically, the link between incomes and human fertility is a more flexible one now. Again, some of the results of rapid population growth that have the most profound effect on economic development are those associated with changes in the age structure. When death rates fall, they fall most rapidly among infants — those children who are less than one year old.

Demographic transition refers to a population cycle that begins with a fall in the death rate, continues with a phase of rapid population growth and concludes with a decline in the birth rate. According to this theory, economic development has the effect of bringing about a

reduction in the death rate. The relationship between birth and death rates changes with economic development and a country has to pass through different stages of population growth. C.P. Blacker divided population into five types as high, stationary, early expanding, low stationary and diminishing. According to the theory of demographic transition, population growth will have to pass through these different stages during the course of economic development.

The four stages of demographic transition are explained as follows**:**

First Stage:

This stage has been called high population growth potential stage. It is characterised by high and fluctuating birth and death rates which will almost neutralize each other. People mostly live in rural areas and their main occupation is agriculture which is in the stage of backwardness. The tertiary sector consisting of transport, commerce banking and insurance is underdeveloped. All these factors are responsible for low income and poverty of the masses. Social beliefs and customs play an important role in keeping birth rate high. Death rate is also high because of primitive sanitation and absence of medical facilities. People live in dirty and unhealthy surroundings.

As a result, they are disease ridden and the absence of proper medical care results in large deaths. The mortality rate is highest among the poor. Thus, high birth rates and death rates remain approximately equal over time so that a static equilibrium with zero population growth prevails.

Second Stage:

It is called the stage of Population Explosion. In this stage the death rate is decreasing while the birth rate remains constant at a high level. Agricultural and industrial productivity increases, means of transport and communication develops. There is great mobility of labour. Education expands. Income also increases. People get more and better quality of food products. Medical and health facilities are expanded.

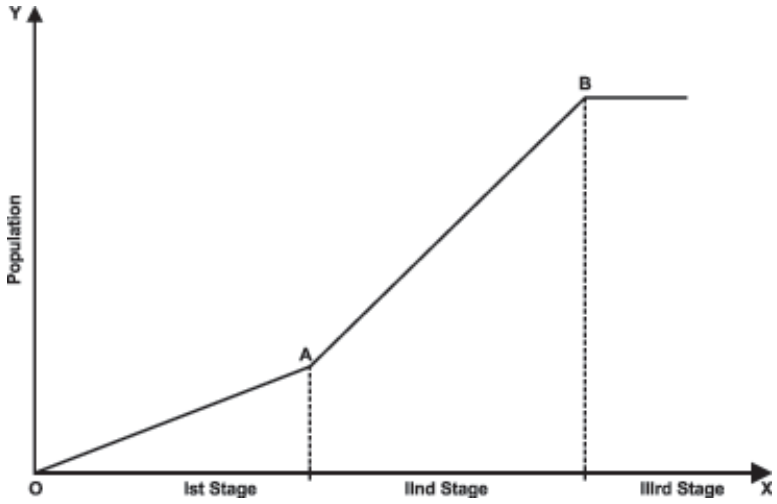

Figure: 4

During the stage economic development is speeded up due to individual and government efforts. Increased use of better technology, mechanization and urbanisation takes place. But there is no substantial change in the men, attitude of the people and hence birth rate stays high i.e., economic development has not yet started affecting the birth rate.

Due to the widening gap between the birth and death rates, population grows at an exceptionally high rate and that is why it has been called the population explosion stage. This is an "Expanding" stage in population development where population grows at an increasing rate, as shown in figure, with the decline in death rate and no change in birth rate.

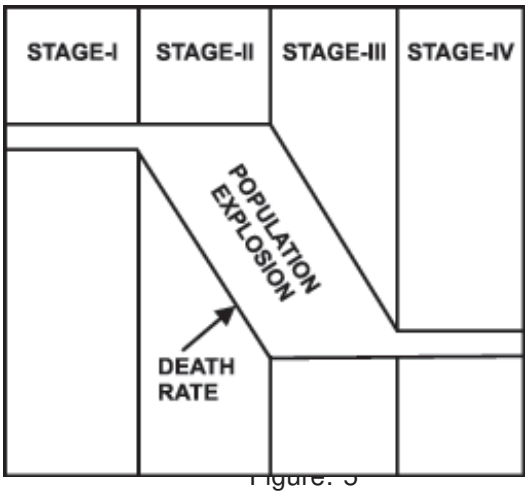

Figure: 3

Third Stage:

It is also characterised as a population stage because the population continues to grow at a fast rate. In this stage, birth rate as compared to the death rate declines more rapidly. As a result, population grows at a diminishing rate. This stage witnesses a fall in the birth rate while the death rate stays constant because it has already declined to the lowest minimum. Birth rate declines due to the impact of economic development, changed social attitudes and increased facilities for family planning. Population continues to grow fast because death rate stops falling whereas birth rate though declining but remains higher than death rate.

Fourth Stage:

It is called the stage of stationary population. Birch rate and death rate are both at a low level and they are again near balance. Birth rate is approximately equal to death rate and there is little growth in population. It becomes more or less stationary at a low level.

These stages of demographic transition can be explained with the help of diagram 3 given below:

Stage I is characterised by high birth rate, death rate and low rate of population growth.

Stage II is characterised by high and stationary birth rate, rapidly declining death rate and very rapid increase in population.

Stage III is characterised by a falling birth rate, low and stationary death rate and rapidly rising population.

Stage IV is characterised by low birth rate and low death rate with stationary population at a low level

Critical Evaluation of the Theory of Demographic Transition:

Theory of demographic transition and its application to developing countries has also been criticised.

The following shortcomings of this theory have been pointed out:

1. European Experience and not a Theory:

   Firstly, the critics have pointed out that particular demographic transition is a fact obtained from European experience and not a theory. In other words, the theory of demographic transition only describes the historical experience of population growth and economic growth in currently developed European countries. The experience and the fact of the European development cannot be generalised to formulate a theory which is applicable to developing countries.

   Therefore, it has been argued that demographic transition witnessed in European development cannot necessarily occur in the developing countries of today. Various reasons have been given in defence of this view. Firstly, it has been argued by Kuznets that the demographic characteristics of the currently developing countries are quite different from those of Europe or other currently developed countries in their period of industrial revolution.

   According to him, as compared to today's underdeveloped countries, pre-industrial European countries have had smaller size of the population (generally less than 15 million), lower birth and death rates and smaller rates of growth of population. For instance, in England in its period of industrial revolution, largest increase in population per decade was nearly 18% during 1811-21 which amounts to 1.7% per annum. This is substantially below the rate of population growth ranging between 2 and 3½% per year in the currently developing countries.

2. Causes of decline in death rates are different:

   Another criticism against the theory of demographic transition as applied to developing countries is that the causes of the decline in death rate in the European countries were different from those operating in the developing countries of today. The decline in death rate in the European countries was mainly due to the rise in the standard of living, improvements in the diet of the people which increased their resistance to the diseases. Medical improvements, except in case of smallpox, were not a significant cause of decline in death rate in the growth of European countries.

   On the other hand, the sharp decline in the death rate in the developing countries like India is mainly due to the improvements in medicine, public health techniques, use of insecticides, mass vaccination and the discovery and use of antibiotics and sulpha drugs. These medical improvements have caused a sharp decline in death rate even

when the per capita income or standard of living of the people has not shown any significant increase.

In other words, the population explosion in Europe was caused by the rise in per capita income and consumption standards as a result of economic growth, whereas the population explosion experienced by the presently developing countries is due to the factors which are external to the process of economic growth. Medical improvements which have brought down the death rate have not been caused by the increase in per capita income but have led to the decline in death rate and have caused rapid increase in the rate of population growth. They are making increases in per capita income even more difficult to achieve.

5.6 Demographic Dividend

The demographic dividend is the economic growth potential that can result from shifts in a population's age structure, mainly when the share of the working-age population (15 to 64) is larger than the non-working-age share of the population (14 and younger, and 65 and older).Sustainable development cannot be achieved without assuring that all women and men, and girls and boys, enjoy the dignity and human rights to expand their capabilities, secure their reproductive health and rights, find decent work, and contribute to economic growth. Developing policies and investments to secure that future requires that governments know the size, sex, location and age structure of their present and future populations.

Countries with the greatest demographic opportunity for development are those entering a period in which the working-age population has good health, quality education, decent

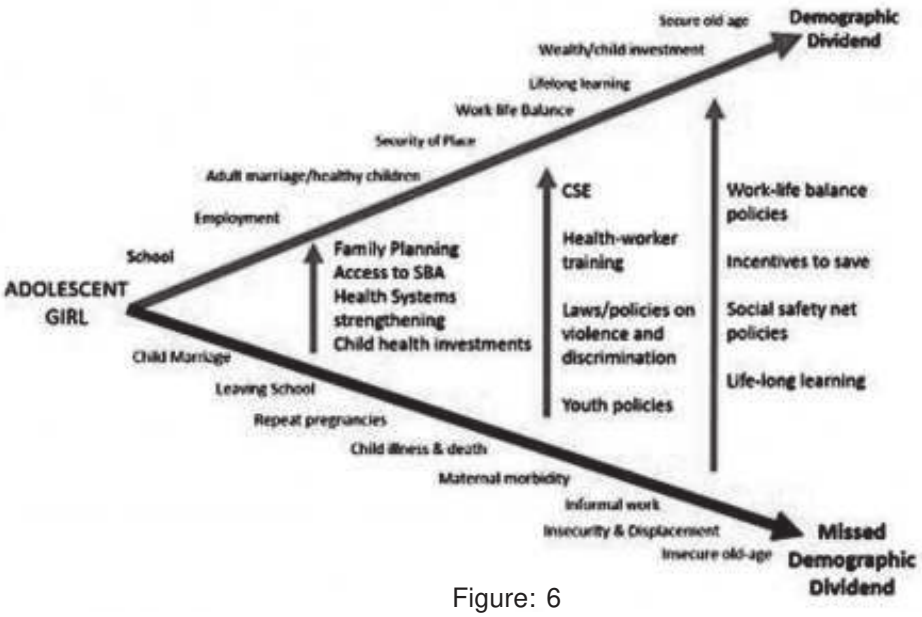

Figure: 6

employment and a lower proportion of young dependents. Smaller numbers of children per household generally lead to larger investments per child, more freedom for women to enter the formal workforce and more household savings for old age. When this happens, the national economic payoff can be substantial (Fig. 6). This is a demographic dividend.

Realizing a demographic dividend requires multiple investments. The most essential are building the capabilities of people and ensuring their rights and freedoms to achieve their potential. Young people need the chance to gain the education and experience to succeed in a competitive global workplace, which demands more skills, education and technical expertise than ever before. Tragically, the chance to realize one's potential is often derailed, particularly for millions of girls, who are pushed from school, subjected to child marriage, early and unplanned pregnancies, poor access to health care and limited education. When large numbers of people find themselves trapped in this trajectory of restricted opportunities, poor health and limited capabilities, there can be no demographic dividend: An age structure with fewer dependents is unlikely to occur, and each person's ability to develop their capabilities, save and invest, be resilient in the face of crises and take the risk to innovate will be permanently undermined. The fulfillment of human rights – including sexual and reproductive health and reproductive rights – is therefore essential for any society to achieve a demographic dividend.

History shows there is a real possibility of countries missing their chance at a dividend. The opportunity to reap a demographic dividend occurs during a finite window that gradually closes as the working generation ages. For example, the late twentieth century saw a demographic dividend in Asia. Gross domestic product increased sevenfold, an economic boom described as the *Asian economic miracle*. However, in Latin America around the same time, growth was only twofold, reflecting unequal access to investments in education and health, including the reproductive health and rights of women and girls.

Achieving a demographic dividend requires that each country understand the size and distribution of its population, its current and projected age structure, and the pace of population growth. A growing number of analytic tools are available for such population assessments, shortening the time and resources needed for a situation analysis of national circumstances.

National needs must be matched to a sequence of short- and medium-term investments that assure the rights of all young people to plan their lives, be free of violence and trauma, be assured of essential freedoms and reproductive rights, and have access to quality education and mentoring. Dividends will be constrained without simultaneous investments in decent job creation, good governance, infrastructure and a functioning business climate. But all progress will be constrained if the population is under-prepared, and every person – particularly every girl – cannot pursue her education or navigate her transition to adulthood assured of her human rights. Such assurance includes the freedom to decide when and whom to marry, the timing and number of her children, and the security to balance work and family life.

5.7 India's Demographic Dividend

India is well known as a country endowed with surplus labour. In the coming two decades, India is most likely to have a relatively large working – age population (aged between 15 to 59 years), as compared to its dependent population (aged between 0 to 14 years and 60 above). It is estimated that 70 per cent of the Indian population will be of the working age latest by 2025. Full exploitation of this youth bulge which will reach its peak in somewhere around 2035 can be used to fuel the economic growth of our economy. To fully utilize the benefits of this demographic dividend window, India needs to overcome multiple challenges like skewed sex ratio, social and political conflicts, poor infrastructure and unfavorable foreign investment climate and policies. However, the most serious challenge that is likely to adversely affect India's human capital and the employability of its working population is the level and quality of education. The gains of demographic dividend are transient, and do not last forever. Specifically, In case of India the potential benefits of the demographic dividend have to be realized within a window of next few decades. More specifically, the United Nation's Population Division estimates that the percentage of 15-59 age group will reach its peak of around 64.6 per cent in 2035 and would taper off gradually in the subsequent years.

This means that India will see a significant rise in working age adults India's dependency ratio is low at 0.6, compared with the developed countries. That ratio is going to decline further with fertility rates continuing to fall. The demographic dividend is a window of opportunity in the development of a society or nation that opens up as fertility rates decline when faster rates of economic growth and human development are possible when combined with effective policies. With the declining working age population in the other countries particularly developed countries, more jobs emanating from the developed countries will be outsourced and India can gain from it due to demographic dividend. According to International Monetary Fund (IMF), India's continuing demographic dividend can add about 2 percent to the annual rate of economic growth, if harnessed properly. An increase in the share of a country's working-age (15–64 years) can generate faster economic growth. The working-age population is generally more productive and saves more increasing domestic resources for investment. The demographic dividend has been regarded as a key factor for economic growth.

However, there are many challenges which India needs to overcome to harness the opportunities created by demographic dividend. The growth in the working-age ratio is likely to be concentrated in some of India's poorest states and that the demographic dividend will be fully realized only if India is able to create gainful employment opportunities for this working-age population. Since most of the new jobs that will be created in the future will be highly skilled and lack of skill in Indian workforce is another serious challenge. There are serious problems with Indian higher education. These include a shortage of high quality faculty, poor incentive structures, lack of good regulation. As bad as Indian higher education is, the worst problems are in primary education. After all, without a good foundation, subsequent education cannot happen easily and effectively. This is true even for vocational training, not just elite education for the advantaged and talented. At the primary level, there

are also serious problems with health and nutrition that impact the effectiveness of education and the capacity for learning. According to the Human Development Report (HDR) published by the United Nations Development Programme (UNDP), India is still in the medium human development category with countries like China, Sri Lanka, Thailand, Philippines, Egypt, Indonesia, South Africa, and even Vietnam has a better rank. Therefore health and education parameters need to be improved substantially to make the Indian workforce efficient and skilled.

Government has undertaken some measures to impart skills to the Indian workforce to reap the benefits of demographic dividends. Major challenge of skill development initiatives is also to address the needs of huge population by providing skills in order to make them employable and help them secure decent work. Government established National Skill Development Corporation (NSDC) to contribute significantly (about 30 per cent) to the overall target of skilling / up skilling 500 million people in India by 2022, mainly by fostering private sector initiatives in skill development programmes and providing funding. Major objectives of NSDC are:

- Upgrade skills to international standards through significant industry involvement and develop necessary frameworks for standards, curriculum and quality assurance
- Enhance, support and coordinate private sector initiatives for skill development through appropriate Public-Private Partnership (PPP) models; strive for significant operational and financial involvement from the private sector
- Focus on underprivileged sections of society and backward regions of the country thereby enabling a move out of poverty; similarly, focus significantly on the unorganized or informal sector workforce.
- Play the role of a market-maker by bringing financing, particularly in sectors where market mechanisms are ineffective or missing
- Prioritize initiatives that can have a multiplier or catalytic effect as opposed to one-off impact.

Thus to harness the potential of demographic dividend development of skill base and investment in human capital is needed. However, more holistic measures are essential to make the Indian work force not just economically competitive but also efficiently competitive. Moreover, measures should have pan Indian presence and not just concentrated in metropolitan cities as most of the workforce is likely to come from the rural hinterland. It will not just help in increasing the economic development but will also help in curbing the regional and social inequalities.

5.8 Conclusion

Demography a statistical and mathematical study of the size, composition, spatial distribution of human population, and of changes overtime in these aspects through the operation of the five processes of fertility, mortality, marriage, migration and social mobility. Although it maintains a continuous descriptive and comparative analysis of trends, in each of these processes and

in its net result, its long run goal is to develop a body of theory to explain the events that it charts and compares. It is the study of human populations – their size, composition and distribution across space – and the process through which populations change. Births, deaths and migration are the 'big three' of demography, jointly producing population stability or change.

A population's composition may be described in terms of basic demographic features – age, sex, family and household status – and by features of the population's social and economic context – language, education, occupation, ethnicity, religion, income and wealth. The distribution of populations can be defined at multiple levels (local, regional, national, global) and with different types of boundaries (political, economic, and geographic). Demography is a central component of societal contexts and social change is known as demography.

The study of demography is important as it allows us to study the nature in which our population changes over time, and this is important as it allows us to study how changes to the population, such as the aging population phenomenon we are witnessing, can lead to a decrease in GDP and also an increase in mechanisation of jobs and production in developed countries. This is very important because the human race and the human population need to be evaluated, so we can judge how to allocate resources and to ensure that our lifestyle is sustainable. To avoid such issues, it is important to study these things and lay out procedures to ensure that this cannot happen, for the betterment of society.

The demographic dividend refers to a period of 20 to 30 years in which the overall fertility rate declines due to reduction in child and infant mortality and a significant proportion of the population falls in the working age-group. This in turn spurs economic growth and reduces spending on non-working dependent population. It is estimated that this demographic dividend would increase India's real per capita income by at least 5 per cent over the next three decades. However to reap its benefits substantial investments have to be made in skill development and enrichment of the human capital.

5.9 Key Terms Simplified

Demographic indicators: Indicators of demography that can be measured as sex ratio, fertility rate, mortality rate, morbidity, life-expectancy etc.

Urbanisation: It refers to the population shift from rural areas to urban areas, the gradual increase in the proportion of people living in urban areas, and the ways in which each society adapts to this change. It is predominantly the process by which towns and cities are formed and become larger as more people begin living and working in central areas

Migration: It is a way to move from one place to another in order to live and work. Movement of people from their home to another city, state or country for a job, shelter or some other reasons is called migration. Migration from rural areas to urban areas has increased in past few years in India.

Urban Community: An urban Community is a big city or town. It is considered an urban Community if there are more than 2,500 people living in the community. Urban communities are

often busy and crowded. Normally, the city is the most central location in a region.

Population Density: the number of persons living per square kilometre. The population density of India in 2011 is 382 per sq km while urban population is 31.60 % of the total population. Urban migration over the last decade has resulted in the rapid growth of urban slums. **Population Density = Number of People/Land Area.**

Sex ratio: No. of females per 1000 males.

Sex Ratio = {Number of Males/ Number of Females} X 100.

India showcases low sex ratio of 940 female per thousand.

Crude birth rate: Number of live births per 1000 population in a given year.

Crude Birth Rate = {(number of live births) / (total population)} X 1000

Age-specific birth rate = {(number of live births to females in a specific age group) / (female population in that age group)} X 1000

Crude death rate: Number of deaths per 1000 estimated mid-year population in one year.

Crude Death Rate = {(number of deaths) / (total population)} X 1000

Growth rate of population: Net gain in population.

Change in Population Size = (Births + Immigration) - (Deaths + Emigration)

Net reproductive rate: The net reproductive rate is the percentage growth after accounting for births and deaths.

Net reproductive rate (r) is calculated as:

r = {(births-deaths)/population size} X 100

Mortality rates: Mortality rate, or death rate, is a measure of the number of deaths (in general, or due to a specific cause) in a particular population, scaled to the size of that population, per unit of time.

Morbidity rate: It is the frequency or proportion with which a disease appears in a population.

Fertility rates: Total fertility rate (TFR) in simple terms refers to total number of children born or likely to be born to a woman in her life time if she were subject to the prevailing rate of age-specific fertility in the population.

Life expectancy: Life expectancy is a statistical measure of how long a person or organism may live, based on the year of their birth, their current age and other demographic factors including gender

Dependency ratio: The number of dependents to working people.

Dependency Ratio = {(Children or Elderly)/ Working Age Pop.} **X 100**

Dependency Ratio of India 61.1%

5.10 Questions with Answer Hints

Questions Carrying 2.5 marks

1. Define Demographics?
   [Answer: See first paragraph of section 5.2]
2. What do you mean by balanced view of demography?
   [Answer: See ninth paragraph of section 5.3]
3. State the importance of demography for economy.
   [Answer: See tenth paragraph of section 5.3]
4. What do you mean by demographic transition?
   [Answer: See first paragraph of Section 5.5]
5. Define demographic dividend.
   [Answer: See first paragraph of Section 5.6]

Questions Carrying 5 marks

1. Discuss the subject matter of demography.
   [Answer: See second paragraph of Section 5.3]
2. What do you mean by distribution of population?
   [Answer: See third paragraph of Section 5.3]
3. Discuss the micro and macro aspects demography.
   [Answer: See fifth paragraph of Section 5.3]
4. What do you mean by fertility decline?
   [Answer: See first & second paragraph of Section 5.3]
5. State the stages of demographic transition.
   [Answer: See seventh paragraph of Section 5.5]

Questions Carrying 10 marks

1. Write a note on scope and importance of demography as a field of study.
   [Answer: See Section 5.3]
2. Write a short note on fertility decline theory.
   [Answer: See Section 5.4]
3. Critically evaluate the theory of demographic transition.
   [Answer: See Section 5.5]
4. Why demographic dividend is important for the realization of economic potential of a country?
   [Answer: See first paragraph of Section 5.6]
5. Discuss the importance of demographic dividend in context of India.
   [Answer: See Section 5.7]

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UNIT 6 ■ Economics of Social Infrastructure

Structure

6.1 Objectives

After reading this unit, you will be able to:

- know the concept of public good;
- understand the characteristics of public good;
- know the concept of infrastructure;
- classify infrastructure;
- learn the concept of social infrastructure and its importance;
- know the progress of India in social infrastructure.

6.2 Introduction

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 infrastructure, 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 infrastructures — energy and health — it is clear that there is scope for equal access to infrastructure for all.

The development of a country wholly depends on the availability of its infrastructural facilities. Infrastructure plays a vital role in the improvement of the country's standard of living. It also plays an important role in contributing to a higher rate of economic growth.

Infrastructure can broadly be defined as long-term physical assets that operate in markets with high barriers to entry and enable the provision of goods and services. Social Infrastructure is a subset of the infrastructure sector and typically includes assets that accommodate social services. As set out in the table below, examples of Social Infrastructure Assets include schools, universities, hospitals, prisons and community housing. Social Infrastructure does not typically extend to the provision of social services, such as the provision of teachers at a school or custodial services at a prison.

Examples of Social Infrastructure Assets	
Sector	Examples
Health	Medical facilities Ancillary infrastructure (e.g. offices, car-parks, training facilities)
Education	Schools (primary and secondary) Tertiary facilities Residential student accommodation
Housing	State or Council housing Defense force housing
Civic and Utilities	Community & sports facilities Local government facilities Water and wastewater treatment
Transport	Bus stations Park and rides Availability-based road (excluding demand-risk toll roads)
Corrections and Justice	Prisons Court houses

In contrast, economic infrastructure supports economic activity and is often characterised by 'user-pays' or demand-based revenue streams (such as tolls on toll roads or landing fees for an airport). The development and provision of Social Infrastructure is well suited to Public Private Partnerships, which have been used successfully to deliver public infrastructure

since the early 1990s in the United Kingdom, and more recently in Australia and other countries.

6.3 Definition of Public Good

Public good is a commodity or service that is provided without profit to all members of a society, either by the government or by a private individual or organization. As economists traditionally define it, a pure public good has two characteristics: it is both non-excludable and non-rival. Non-excludable is exactly as it suggests—it is not possible to exclude people from using a good or service even if they don't pay (known as free riding). Non-rival simply means that one person's use is not diminished when other people use it. The classic example of a pure public good is the defense of national borders. If you pay for the defense of a country's borders and I don't, we benefit equally if we both live in that country. It is therefore non-excludable. Moreover, it also non-rival, in that my being defended does not diminish the level of defense you receive. Hence, the defense of national borders is a pure public good. In every economy, some goods are provided by the government to the entire people. Such goods are called public good. Specifically, public good is the one that is provided to the society as a whole and consumption by one individual doesn't reduce its availability or doesn't exclude others from consuming it.

So there are two important features for public goods- *non rivalry* (doesn't reduce availability for A if B consume it) and *non-excludability* (no one is excluded from consumption). Examples for public goods are national defense, public parks, street lights, and other basic societal goods. The expenses for providing public goods are met by the government out of taxes. This means that an individual (with the ability to pay taxes) who avoids or evades taxes enjoy public goods and he became a 'free rider'. The provision of public goods is a topic that has been often discussed and yet the theory of public choice, the economic analysis to these choices and actions of individuals is still somewhat argued. The main purpose of this essay will be to identify and discuss the main characteristics of public goods and explain the possible problems/issues faced by such goods for public policy. Public goods can be described as a characteristic of an existing phenomenon with a domain of impact containing at least two actual persons, such that the amount of characteristic encountered by any individual in the domain is the entire amount of that characteristic. However a more precise technical definition of a public good, and a definition that is used quite frequently by economists, is Samuelson's definition, which states that a public good is a good that, once produced for some consumers, can be consumed by additional consumers at no additional cost.

There are two main characteristics that define public goods; the first one is non-excludability, which means it's not possible to exclude anyone from enjoying the benefits of a public good, or from defraying its costs (positive or negative externalities). Neither can anyone willingly exclude himself from their remit. In the provision of a good it is not optimal to restrict its consumption to particular individuals and impossible to charge for. Once the good is non-excludable, no one has the property rights to that particular good and so everyone can consume it. The second one is non-rivalry which is when a good benefits all, including those

who do not contribute to the actual production of the good and the incentive here is that they do not value the public good so they would not have to contribute towards the production through their own demand for the good. If a good is provided for some, it's also available to the rest in equal amounts without someone having to lose out and so in theory it's impossible to prevent any individual from the relevant benefits of the good. This principle can be stated as one man's consumption does not reduce some other man's consumption.

However, some economist opines that the issues of non-rivalry and non-excludability should be kept separate. A perfect example of this is the national defence; once the government decides to spend billions and billions of rupees on the national defence, everyone who lives within the nation, illegal or not, will enjoy the freedom of being protected and homeland security irrelevance of the level of defence they require and how much they value it. Most products are usually scarce and once there consumed, they're usually gone and not available to others. Unfortunately, examples of pure public goods are few and far between. Instead, we are generally faced with goods and services that have only one of the necessary characteristics. A lecture hall is a good example, as it easily excludable (one can close and lock the doors) but adding one additional student is unlikely to reduce the quality of the experience for other students, and so it is non-rival. Health care is similarly conflicted, and infrastructure can be as well.

However, some goods and services that are often considered to be public goods have neither of the attributes that characterize public goods. Instead, they are incorrectly referred to as public goods because they have positive externalities. Externalities are the (often unintended) consequences of an activity that affect other parties but are not reflected in the price. Negative externalities are generally the most discussed, with common examples being things like pollution or carbon emissions that compound climate change. Positive externalities are the benefits to society from a private activity that aren't priced into the good or service itself. Again, public education comes to mind. On average, better-educated people tend to not only have higher incomes (a private benefit), but also better health, are less likely to commit crimes, have more successful marriages, etc. They also tend to raise children that have these same attributes. Therefore, there are benefits to society beyond just the private return to education for the individual. Health care can be similarly considered, although the benefits are often less immediately obvious. Hence the ongoing debate south of the border.

6.4 Infrastructure as Public Good

Infrastructure certainly does not fall into the category of a pure public good. A toll road is clearly excludable. And, if the toll is set below the price that would be determined in the market, congestion could still occur, meaning it could also be rival (although one would expect the owner of road to raise the toll if this were to be the case). This is, of course, often an issue on public roads where there is no immediate cost of use. All roads or parts of roads could also be privatized; meaning tolls could be ubiquitous for use. This is more generally the case for airports, ports, railways, international and some interprovincial bridges, etc., in the form of user fees. However, the private ownership of infrastructure can also lead to

problems. For instance, ownership of the single route between two places creates a natural monopoly, as the cost of building alternative routes is likely to be high. Take the section of road directly in front and adjacent to your house, for example. To get access to ones house, one needs to use that section of road, as there is no other way to access to the house (except maybe by air but at a significant expense). As such, one would be willing to pay a great deal for the use of that section of road. Armed with that knowledge, the owner of the road can charge a toll that is well above where it would be in a competitive market, thereby making a monopoly profit. The same is likely to be true for the owners of each section of road. And not only would the tolls be high, but the inefficiency of endless tolls on all roads would be steep, with all of these additional costs being passed on to consumers in one way or another. As a result, most roads are owned and maintained by the public, not only in India but in the majority of economies. This is particularly true as it pertains to main thoroughfares, as it is generally recognized that ready access to highway infrastructure has enormous positive externalities for economies. And these extend to infrastructure asset types beyond just roads and highways. The following captures the positive externalities of infrastructure: Productive, sustainable infrastructure is essential if we are to drive economic growth, increase employment and enhance the quality of life of all individuals. Indeed, the greater the positive externality – the benefit to the broader public beyond just the private benefit – the greater should be the effort to avoid monopoly ownership and pricing.

Some have stated that private sector involvement in infrastructure is a good thing, often citing public-private partnerships (PPPs) as the primary example. In theory, this is absolutely the case. While private sector financing costs for infrastructure are generally higher than for the public sector, the benefits of the increased likelihood of projects being completed on time and on budget, as well as the risk transfer from the public to private sector, are thought to outweigh this additional cost. However, in practice, PPPs have frequently fallen short of this ideal. This is because risk is generally not transferred from the public to private sector, meaning the pricing of the asset is out of step with the actual amount of risk that is assumed by the private owner. As a result, taxpayers often do not get the value for money they had anticipated. For this reason, the jury remains out on whether PPPs are effective in lowering the overall cost of infrastructure to taxpayers in the long run. That said, many people remain optimistic that the success of PPPs is only a matter of negotiating the right deals on the right projects, which may ultimately prove to be the case.

To conclude, infrastructure does not satisfy the definition of a pure public good, nor does it necessarily have any of the attributes of a public good. Instead, infrastructure creates benefits to society and the economy (positive externalities) beyond just the private returns that come from its ownership, much in the same manner as education or health care. And given the monopoly-like characteristics of infrastructure, which can lead to pricing which is in excess of what would be reached in a competitive market, there is arguably a role for government to play in participating in the market for, and ownership of, infrastructure. In theory, there are benefits to private-sector involvement in the designing, building, financing, operating, and maintaining of infrastructure for public use. However, in practice, these benefits have generally fallen short of expectations. Hence, the jury remains out on whether PPPs are actually effective in reaching their stated goals and delivering value for money to taxpayers.

6.5 Classification of Infrastructure

Meaning of economic infrastructure

Economic infrastructure refers to the facilities, activities and services which support operation and development of other sectors of the economy. It is the basic services that represent a foundational tool for the economy of a nation, region or city. Infrastructure can include physical structures, systems, institutions, services and facilities These facilities, activities and services help in increasing the overall productivity of the economy. They also play an essential role in facilitating the smooth running of all the sectors of the economy.

In addition, infrastructures are such basic requirements like railways, roads, ships, airways, communication, etc. They also include energy, banking, science, technology, health, education and other public utility concerns. Without the existence and presence of economic infrastructures, the growth and fast pace of the economy is impossible. Moreover, infrastructures of an economy are also termed as '*social and economic overheads*'.

The following are common types of economic infrastructure.

Transportation: Transportation services such as roads, bridges, cycle highways, rail, airports and ports.

Energy: Production and delivery of energy including electric grids. Most nations are moving towards sustainable energy sources such as solar panels and wind.

Water: Water infrastructure is that provides a supply of clean water and management of water resources.

Safety & Resilience: Institutions and systems that allow a region to endure stresses such as a natural disaster. For example, institutions like earth-quake detection systems, tsunami shelters and a resilient source of local food.

Financial: Financial markets and services that support basic economic processes such as raising capital, investing, storing wealth, payments and managing risk.

Health & Education: Institutions that provide for basic quality of life such as hospitals and schools.

Standards & Rules: Institutions that provide basic rules and standards that result in productive competition, stewardship of common resources and protection of quality of life.

Public Space: Public space which attracts economic activity such as tourism and corporate offices including parks, beaches and nature reserves.

Culture: Cultural institutions such as museums that attract tourists and companies to a region.

Technology: Basic technology services such as networks.

Environment: Systems that improve environmental conditions such as rain water harvesting and green roofs.

Types of infrastructures

There are two broad classifications of economic infrastructures. They are as follows:

Social infrastructure: They concern with the supply of such services as to meet the basic needs of a society. In simple words, social infrastructures refer those basic services such as education and training. It also includes health and sanitation, drinking water, housing, sewerage, etc. Social infrastructures are also termed as 'social overheads'. These social overheads indirectly support the economic systems. They indirectly increase the productivity and the economy sees the impact after some time. Social infrastructures lead to growth in the long run. Social infrastructure can be broadly defined as the construction and maintenance of facilities that support social services. Types of social infrastructure include healthcare (hospitals), education (schools and universities), public facilities (community housing and prisons) and transportation (railways and roads).

Physical infrastructure: Physical infrastructure is those infrastructures which directly concern themselves with the needs of such production sectors as agriculture, industry, trade, etc. In simple words, physical infrastructure directly supports the economic production. They also directly support the process of production and distribution in the economy. A few such examples are energy, irrigation, transportation, telecommunication, banking, insurance, technology, finance, etc. Physical infrastructures, however, directly increase the productivity and the economy sees the impact immediately. They also lead to an immediate growth in the short run.

Significance of economic infrastructure

The relation between infrastructure and development is a continuous process and progress in development has to be preceded, accompanied and followed by progress in infrastructure; if one intended to accomplish the declared objectives of a self-accelerating process of economic development.

Discussed below are some of the most critical significance of economic infrastructure and its impact on the economy.

- **The smooth functioning of the economy:** Infrastructural facilities are very necessary and vital for the smooth functioning of the economy. They are like wheels of development without which the economy will not be able to function properly.
- **Development of agriculture:** The development of agriculture, to a considerable extent, depends on the adequate expansion and development of irrigation, credit, transport, power, marketing, training and education. It also depends on the improvement of research and development and other such facilities.
- **Development of industry:** Industrial production requires not only machinery and equipment but also requires the following. Energy, skilled manpower, management, banking, insurance and transportation services are crucial. These activities and facilities will directly lead to the development of the industrial sector of the economy.
- **Promotion of investment:** Infrastructural development is definitely a pre-condition got increasing economic investment. Those areas with the sound infrastructural base may succeed in attracting all the more capital for investment.

- **Improvement in productivity:** Infrastructural development such as transportation facilities and education increase the productivity. Development of science and technology is also important in improving the economic productivity. Moreover, research and development also play a critical role in economic improvement.
- **Employee generation:** Infrastructures play a crucial role in the generation of employment opportunities. They improve mobility, efficiency and productivity of labour. Moreover, larger investment, development of industry and agriculture create all the more employment opportunities.

Some of the secondary but essential significance of the economic infrastructure are as follows.

- **Development of backward regions:** The development of backward regions and the removal of regional imbalances is yet another significant contribution of infrastructural facilities. The lack of infrastructural facilities in the backward regions will act as a constraint on the development of those regions.
- **Social change:** Infrastructural facilities will also act as an instrument of social changes. Development of industries, transport facilities and education will change the outlook of people. Apart from these, even science, technology and growth of towns and cities will lead to a changed economic outlook.
- **The growth of GDP:** There exists a very close relationship between spending for infrastructure and GDP growth. Studies reveal that 1% growth in the stock of infrastructure often associates with 1% growth in per capita GDP.
- **All round development/Overall development:** Infrastructural development is important not only for economic growth but also for the overall development. The all-round development of the country and economy is crucial. Infrastructural facilities are also necessary for technological innovation. Along with technological innovation, economic infrastructural facilities are also important for the eradicating poverty and enhancing globalization.

6.6 Importance and Role of Infrastructure

Development of a country depends very much on the availability of its infrastructural facilities. The development of agriculture and industry depends solely on its infrastructure. Without having a sound infrastructural base a country cannot develop its economy. More important and difficult job in the development process of the country is to provide the basic infrastructural facilities.

Importance of economic infrastructure

Economic infrastructure is the nerve centre of the economic system. It plays an important role in the development of not only the economy but of the civilization as well. It is a public utility service which gives place and time utility to goods and services. They link production, distribution centres and the end consumers as well. Therefore, infrastructures bring together the elements of the economic system.

Some of the prime importance of infrastructures:

- They help in the development of the market and all the elements within.
- It also facilitates large-scale production for the purpose of smooth functioning of the economy.
- They result in the territorial division of labour which is great.
- They also ensure price stability in the market.
- Economic infrastructure definitely ensures the mobility of labour and capital within/ from the economy.
- It results in the overall growth of towns and cities.
- Infrastructures provide for a lot of employment generation and employment opportunities.
- They also play a crucial role in national defence activities.
- Infrastructures in the economy directly result in the unity of various economic components.
- The economy and the nation will be able to meet any emergencies that arise.
- It creates a place and time utility.
- Infrastructural development plays a vital role in the development of agriculture and industry.
- Infrastructure like transportation, communication and telecommunication breaks any economic isolation that prevails in the country.
- They are a great and rich source of revenue to the Government.
- The development of economic infrastructure will directly result in the development of economic trade.

Thus, infrastructure plays a multifarious role in any economy. The role of infrastructure is discussed below:

- Tapping Development Potential: Infrastructural facilities help in tapping development potential available in remote and backward regions of a country. Infrastructure promotes development of backward regions by utilizing its development potentials.
- Facilitates Functioning of Economy: Functioning of an economy is very much determined by the availability of infrastructure facilities. Adequate infrastructural facilities open larger opportunities for undertaking productive activities in higher degree so as to invest more resources and produce more.
- Facilitates Smooth Flow: Infrastructural facilities smooth flow of material and commodities between different regions and thereby facilitate developmental activities.
- Raising Mobility of Manpower: Development of infrastructure, especially transportation and communication facilities can play an important role in raising mobility of manpower resources of the country both within and outside the country.

- Promotes Development: Infrastructural development in the form of capital stock, power, irrigation, transportation and communication etc. can promote development at a progressive rate. Increase in the production of capital stock, i.e., steel, cement, machine and tools etc. can stimulates production in all different industries. Infrastructure can also establish link between production points and input supply points. Economists like Rosenstein-Rodan, Hirschman and Rostow realized the importance of infrastructure in promoting development of a country. Myrdal in his seminal work Asian Drama also regarded existence of infrastructural facilities as a necessary condition for development.
- Reducing Poverty: Infrastructure can open the path of inclusive development and can thereby reduce the poverty level. Rural poor can be uplifted through better infrastructure like roads, irrigation, extension services etc. by raising the farm productivity and non-farm rural employment. Similarly, urban poor can also be benefitted through infrastructural facilities by providing clean water, better sanitary conditions, road and drainage facilities etc.
- Rational Use of Financial Resources: Infrastructural facilities in the form of development of banking and insurance facilities can pave the way for rational use of financial resources in the country.
- Promotes Marketing and Trade: Development of infrastructure can promote marketing and trading facilities both within and outside the country by developing supply chain, marketing hubs and thereby helps agriculture and industry sector to sell their output at a remunerative prices.
- Enhance Social Welfare: Development of social overheads in the form of better education, health, sanitation, environment etc. can enhance the level of social welfare for the general people of a country. Thus infrastructural facilities are playing an important role in promoting economic development of a country.

6.7 India's Progress in Social Infrastructure

Economic development depends on the existence of an integrated infrastructure or social over-head capital which generates externalities. This is why, since 1956, serious attempts have been made to build heavy industries in the public sector. In fact, one of the causes of expansion of the public sector in India has been infrastructure building. Heavy industries such as iron and steel, coal, power, petrochemicals, heavy engineering, automobiles, etc. are essentially input-supply-ing industries. India's main task ahead is the ending of poverty and ignorance and disease and inequality of opportunity, which expands our freedom to lead the lives we value. Basic education, good health and other human attainments are not only directly valuable as constituent elements of our basic capabilities, these capabilities can also help in generating economic success in the sense of contributing to enhancing the quality of human life in other ways. It is a mistake to see the development of education, health care and other basic achievements only or primarily as expansions of 'human resources – the accumulation of 'human capital' as if people were just the means of production and not its

ultimate end. This will not be a reality in the absence of adequate and timely development of social infrastructure.

Structural Adjustment and Social Infrastructure:

Many of the developing countries of Asia, Africa and Latin America-which experienced slow economic growth or none at all in the 1980s-undertook programmes of 'structural adjustment' in cooperation with the IMF and the World Bank. These countries agreed to make major policy changes-correcting macroeconomic imbalances and reforming macro and sectoral policies in exchange for external assistance. In 1990, the United Nations called for 'adjustment with a human face' which requires a set of policies that would permit growth to resume, raise the productivity of the poor, improve the equity and efficiency of social services, compensate the poor for deficits in nutrition and health services during adjustment periods of limited duration and improve monitoring of the conditions of affected low income groups particularly children. While macroeconomic adjustment programmes undoubtedly can be carried out in ways that give more attention to the plight of the poor, a more funda-mental solution to the problem of poverty in Third World countries that have not been grow-ing is resumption of economic growth itself, combined with the provision of basic social services to the poor and policies that seek to increase their participation in the development process. It is against this backdrop that we evaluate India's progress in sustaining reform and reducing poverty, with particular reference to development of social services and social in-frastructure.

India's Performance in Developing Social Infrastructure:

India continues to make good progress in increasing incomes and improving living standards over the past decades. Since the adoption of economic reform programmes in July 1991 in the context of the structural adjustment programmes, poverty continues to decline and many social indicators—in particular literacy—continued to improve. The delivery of public services in health and education is fraught with problems related to limited accountability for performance, low management and worker incentives, inadequate materials and equipment for effective health care and education, demands for payment for public services and poor targeting of services and subsides at the poor. As a result, private delivery of health and education is expanding rapidly-to the public in general and even to the poor. In India as in other developing countries, greater coverage and more effective elementary edu-cation in grades 1-8 would be the education sector's most significant contribution toward alleviating poverty. No doubt—average educational attainment has improved in India. Yet India still lags behind other developing countries in average educational attainment—particularly among the poor. No doubt large benefits arrive from achieving a critical minimum level of education across the population. A major indication of India's recent progress in education is the significant rise in literacy rates within a decade from 52%-64%. Progress is still slow but the number of illiterates (aged seven and above) which had actually risen from 1981 to 1991 declined from 1991 to 2002.

Among the States, some poorest—for example UP, Bihar and Rajasthan—registered signifi-cant improvements in literacy from low bases. In most of these States, female literacy rose even faster than overall literacy. Although India has raised literacy rates, it still has a long way to go. Even China and Indonesia have overtaken India in literacy rates. Gross

enrolment ratios have also improved reaching 90% at the primary stage in which girls' enrolment being 73%. In spite of this, 33 million children in the age group 6-11 are still out of school. Moreover, 7.8% girls and 6.9% boys in the age group 6-11 are in the workforce, mostly in rural areas. Children of poor families are less likely to be enrolled in schools. This is a major factor behind the low enrolment rates. Moreover, primary-level learning achievement is low.

As regards to health outcomes it can be seen that life expectancy at birth improved from 51 to 61 between 1973 and 2003 and the infant mortal-ity decreased from 137 to 74 per 1,000 live births. On the demographic front, fertility had declined to 3.6 births per woman in 2003 compared to 6 in 1951. Nutrition is a particular problem area. India has a percentage of malnutrition and some segments of the population have among the highest levels of malnutrition in the world. Wean-ing children and women are particularly affected. There have been only modest declines in the levels of severe and moderate malnutrition in children in the last 20 years. The poor suffer from health and poverty related problems – high infant mortality rate, high mortality rates, high fertility rate and high rates of child malnutrition. The reduction in infant mortality has slowed down during the 1990s. The proximate reason is the slowdown in poverty reduction. Another reason is the impact of the stubbornly high levels of disease and malnutrition as also poor sanitation and water supply, particularly in the poorer States.

India's health programmes need to improve their services for females. India's ratio of fe-males to male is below one – 927 females to 1,000 males. This gender disparity suggests a need to make India's health care, nutrition and social rights of women more equitable. The relative neglect of women's health is also reflected in poor reproductive health indicators: maternal mortality is over 430 deaths per 100,000 live births in India, compared to an average of 350 among low and middle-income countries. Health and education outcomes are inter-related. Educated people take more care about their health. And healthy workers are more efficient than workers with ill-health.

Major Challenges:

India's social services are facing major challenges. A growing population, industrialization and a globalizing economy that places a premium on information and technology are stretching the capacity of India's educational system to deliver relevant and effective serv-ices. Yet enormous tasks remain: getting 33 million children from poor families into pri-mary schools, increasing the retention rates so that more children finish primary grades and upgrading the average quality of the schooling received. In health, the country is un-dergoing an epidemiological transition. There continue to be high rates of communicable diseases, malnutrition and maternal; and parental illnesses, representing a large unfinished agenda that predominantly affects the poor. There are also growing rates of non-communi-cable diseases, while rapid urbanization is creating new health problems. Even though the social sectors are changing dramatically, the role played by the public sector has changed little.

Achievements so Far:

In health, India's public spending is very low – only 1.2% of its GDP. Public spending on preventing and promotion of primary care services has not kept up with the growth of

demand for services, particularly for people below the poverty line. India also lags in addressing the determinants of good health that lie outside the health system such as in water and sanitation, nutrition and education. For example, at 0.5% of GNP, India spends far less on nutrition programmes than what is needed to reduce the high rates of malnutrition. In education, total private spending (excluding overseas education) is estimated at about one-third of education expenditure. Although India's public spending on health is low, overall health spending is high because of private spending. Private spending on health is four times public spending that is about 80% of health spending in India. As a result, India's overall expenditure on health is about 6% of GDP, one of the highest in developing countries. There are large inter-State variations in private financing and provisions. For example, the lowest proportions of private hospital care are in rural Orissa and West Bengal (9% and 18% of hospitalizations, respectively), compared to over 75% in rural Andhra Pradesh and Bihar.

Despite the high levels of spending on health reflecting high private spending, India's health indicators are relatively poor. The private health sector, as currently organized, is unlikely to improve the health and nutritional status of the poor substantially. Private spending and delivery neglect 'public goods' or inequality-reducing characteristics of key preventive and promotes health services. The private sector remains virtually unorganized and has a widely variable quality of care. Moreover, much of the private sector is dominated by profit motives often resulting in over education, inappropriate use of technology and overcharging of patients. These problems are really serious for the poor who lack information on the quality of care and have a hard time paying for private care. On the other hand, as in education, the failings of the public sector health services are leading to rising demand for private services. So the public sector has an important role to play in enhancing the effectiveness and access to individual health services, and in developing and implementing comprehensive policies addressing pri-vate financing and delivery.

The salient features that emerge of India's social infrastructure are:

1. The poor are often not reaping benefits from public health and education services. In con-trast, education and health costs are enormous burdens for the poor.
2. Health care also absorbs a major portion of poor families' incomes but often the spending and public health services do not yield much benefit. In such a situation, health gaps be-tween the rich and the poor are likely to increase.
3. Special attention is to be paid to the role of basic education in social transformation as well as economic expansion.
4. No doubt health and education services are a public responsibility. But the goal of reduc-ing poverty in India will remain elusive as long as the poor have low utilization of preven-tive and curative health services, poor hygienic conditions, low school enrolment and at-tendance and poor quality schools and health services.
5. The rapid expansion of the private sector in health and education is partly a result of the public sector's problem in providing quality services. But private sector activities in these areas are not effective in providing public goods and are beyond the reach of many of the poor.

6. Improvements in education must emerge from the community and at the school level. What is of paramount importance in reducing poverty is faster economic growth. This can be achieved by making more investment on human capital.
7. The resources that are applied to improving primary education need to be targeted at those groups in the population that are most in need of support.
8. Public investments in health are critical for the sustainability of India's development and poverty alleviation.

Growth of Infrastructure during the Planning Period:

In Indian planning high priority was given to the development of infrastructure from the very beginning, thus a huge amount of fund was allocated in different plans for building various infrastructural facilities. In the First Six Plans, about 55 to 61 per cent of the total plan outlay was devoted to the development of infrastructure. Seventh Plan allocated about 63 per cent of the total plan outlay to infrastructure. Eighth plan also allocated about 16.1 per cent of the total outlay to infrastructure. Due to continuous heavy investment of the infrastructural projects during the four decades of planning, infrastructural facilities in the country has recorded a phenomenal increase. Accordingly, the gross irrigated area has increased significantly from 23 million hectares or 17 per cent of gross cropped area in 1950-51 to 89.4 million hectares or 53 per cent in 1995-96. Similarly, power generation also increased from 5 billion kWh in 1950-51 to 380 billion kWh in 1995-96. Similarly, tremendous growth of other infrastructural facilities has also been recorded during these plan periods. This is mainly due to this rapid development of these infrastructural facilities in India. The agricultural production has recorded a three-fold increase and industrial output has also recorded more than seven fold increase during these four decades of planning.

Recent Strategy Adopted by the Government for Infrastructure Development:

In the past, the responsibility for providing infrastructure services was vested solely with the Government. This was mostly due to a number of reasons including lumpiness of capital investments, long gestation periods, externalities, high risks and low rates of return. But in recent times the old paradigm of infrastructure being a public sector monopoly has been challenged by fiscal constraints and technological innovations. Limits on budgetary allocations and public debt, and the dismantling of the allocated system of credit have catalysed the encouragement of private entry in infrastructure provision. The Government has recently announced guidelines for private investment in highway development through the Build Operate Transfer (BOT) route. Besides simplifying procedures and providing more financial concessions, these measures would facilitate preparation of detailed feasibility reports, clearances for the right way of land, relocation of utility services, resettlement and relocation of the effected establishments, environmental clearance and equity participation in the highway sector. The Government has also approved clear and transparent guidelines for encouraging private sector participation in ports and is in the process of setting up a tariff regulatory authority in 11 major ports.

Following are some of the **new initiatives** undertaken by the Government for the development of infrastructure sector:

General Measures:

The Government has introduced certain general measures:

(a) Introduction of uniform tax holiday for 15 years for all infrastructure projects;

(b) Creation of Foreign Investment Implementation Authority to smoothen flow of FDI into the infrastructure sector;

(c) The import duty structure for project imports rationalised;

(d) Progressive corporatization of public sector service providers in the areas of telecommunication and ports;

(e) Custom duty has been reduced to boost InfoTech, Telecom industries and other knowledge based industries.

Power:

(a) Announcement of Mega Power Project policy;

(b) Restructuring of SEBs to be encouraged

(c) New transmission and distribution system to get fiscal benefits given to infrastructure sector;

(d) Increased budgetary support provided for the Tehri Hydro and the Naptha Jakhri Hydro Projects to ensure its commissioning by March 2002;

(e) Assistance provided to States' power sector reforms and for undertaking investments or renovation and modernisation of old and inefficient plants and for strengthening the distribution system;

(f) Scheme for securitization of dues of Central Sector Power and Coal utilities to assist the SEBs to clear these dues. Central Government support is linked to reforms in the operation of SEBs.

Telecom:

(a) Domestic long distance calls to be opened up;

(b) Department of Telecom Services (DTS) is to be corporatized by 2001;

(c) DTS/MTNL is to enter as third cellular operators;

(d) TRAI reconstructed through an ordinance;

(e) Specific targets for Telecom is announced so as to provide phone on demand by 2002, achieve telecom coverage of all villages in the country by 2002, provide internet access to all district headquarters by 2002 etc.

(f) Domestic Long Distance Service has been opened up without any restriction on the number of operators;

(g) Department of Telecom Services (DTS) and Department of Telecom Operations (DTO) have been corporatized; and

(h) BSNL and MTNL are permitted to enter as third cellular operator in their respective circles.

Roads:

A new cess of Rs 1 per litre on HSD is imposed by the Government to generate funds which will be transferred to Central Road Fund. Most of it will be used for development and maintenance of State Roads and National Highways etc.

The Government has announced a major initiative for road development, the National Highways Development Project (NHDP). The cost of the project is estimated at around Rs 54,000 core. Moreover, steps are taken for accelerated implementation of Prime Minister's NHDP project from Petrol and Diesel cess and additional fund raising measures are undertaken for NHAI.

Railways:

Indian Railway Catering & Tourism Corporation (IRTC) Ltd. is incorporated as a Government Company with the objective of upgrading and managing rail catering and hospitality. Indian Railways have issued letters of intent for ownership, operation and management of two luxury trains in private sector.

Civil Aviation:

The Government has made necessary arrangement for restructuring of airports and Airport Authority of India (AAI) through long term leasing route:

(a) It is proposed to divest government equity in Indian Airlines and Air India;

(b) It is proposed to lease out international airport at Mumbai, Delhi, Chennai and Kolkata on long term basis;

(c) It is decided to set up new international airport at Bangalore, Hyderabad and Goa with private sector participation.

Urban Infrastructure:

The Government has introduced special package for Housing Construction and Services, which will facilitate development of urban infrastructure. In order to improve urban infrastructure, the Government enhanced the tax benefits for housing and also extended tax holiday to urban infrastructure.

6.8 Conclusion

The prosperity and progress of a country largely depends upon the development of agriculture and industry. While the agricultural development requires facilities like irrigation, power, credit, transportation etc. but the industrial production also needs machines, equipment, energy, skilled manpower, management personnel, marketing, banking and insurance facilities, transportation services etc. These infrastructural facilities include various economic and social overhead viz., Energy (Coal, Oil, and Electricity), Irrigation, Transportation and Communication, Banking, Finance and Insurance, Science and Technology and other social overheads like education, health and hygiene.

All these facilities jointly constitute the infrastructure of the country. Like other countries, the developmental process of India put much emphasis on the growth of infrastructure. All these facilities and services helping the agricultural and industrial sector jointly constitute the

infrastructure of a country. During the last 200 year or more, industrial and agricultural revolutions in England and other countries were accompanied by large scale development of infrastructural facilities.

6.9 Key Terms Simplified

Public-Private Partnership (PPP, 3P or P3): It is a cooperative arrangement between two or more public and private sectors, typically of a long-term nature. Governments have used such a mix of public and private endeavors throughout history. However, the late 20th century and early 21st century have seen a clear trend towards governments across the globe making greater use of various PPP arrangements

Physical asset: It is an item of economic, commercial or exchange value that has a material existence. Physical assets are also known as tangible assets. For most businesses, physical **assets** usually refer to properties, equipment, and inventory.

Social service: Social services are a range of public services provided by the government, private, profit and non-profit organizations. These public services aim to create more effective organizations, build stronger communities, and promote equality and opportunity.

User pay principle: User pays, or beneficiary pays, is a pricing approach based on the idea that the most efficient allocation of resources occurs when consumers pay the full cost of the goods that they consume.

Non-excludability: In economics, a good or service is called excludable if it is possible to prevent people who have not paid for it from having access to it. By comparison, a good or service is non-excludable if non-paying consumers cannot be prevented from accessing it.

Non Rivalry: In economics, a good is said to be rivalries or rival if its consumption by one consumer prevents simultaneous consumption by other consumers, or if consumption by one party reduces the ability of another party to consume it.

Externality: an externality is the cost or benefit that affects a party who did not choose to incur that cost or benefit. Externalities often occur when a product or service's price equilibrium cannot reflect the true costs and benefits of that product or service. Positive externalities are benefits that are infeasible to charge to provide; negative externalities are costs that are infeasible to charge to not provide.

Market failure: It is the economic situation defined by an inefficient distribution of goods and services in the free market. Furthermore, the individual incentives for rational behavior do not lead to rational outcomes for the group.

Excludability: A good or service is called excludable if it is possible to prevent people (consumers) who have not paid for it from having access to it. By comparison, a good or service is non-excludable if non-paying consumers cannot be prevented from accessing it.

Monopoly profit: a monopoly is a firm that lacks any viable competition, and is the sole producer of the industry's product. In a normal competitive situation, no firm can charge a price that is significantly higher than the Marginal cost of producing the product.

Merit goods: The merit good is a commodity which is judged that an individual or society should have on the basis of some concept of need, rather than ability and willingness to pay.

F**ree rider problem**: A rational person will not contribute to the provision of public good because he does not need to contribute to the benefit from it.

Structural Adjustment Programmes: Since the 1990s, the IMF and the World Bank have imposed certain conditions on developing member countries for obtaining financial assistance. Such conditional loans are known as struc-tural adjustment loans. The purpose of structural adjustment lending and structural adjustment programmes is to improve growth potential of countries, with focus on key macro variables of GDP growth, savings, investment, exports and the balance of payments. Of late the IMF and the World Bank have insisted that LDCs undertake programmes with focus on poverty alleviation. This demands building up of an integrated social infrastructure (SA). This is absolutely essential for achieving faster economic growth and higher standard of living through proper provision of social goods.

6.10 Questions with Answer Hints

Questions Carrying 2.5 marks

1. Define infrastructure.

   [Answer: See first paragraph of section 6.2]

2. Define public good.

   [Answer: See first paragraph of section 6.3]

3. State two important features of public good.

   [Answer: See second paragraph of section 6.4]

4. Define economic infrastructure.

   [Answer: See first paragraph of Section 6.5]

5. Define social infrastructure.

   [Answer: See third paragraph of Section 6.5]

6. Define physical infrastructure.

   [Answer: See fourth paragraph of Section 6.5]

Questions Carrying 5 marks

1. Cite some examples of social infrastructure.
   [Answer: See second paragraph of Section 6.2]
2. State the characteristics of public good.
   [Answer: See second paragraph of Section 6.3]
3. Distinguish between physical and social infrastructure.
   [Answer: See second paragraph of Section 6.5]
4. State the secondary importance of economic infrastructure.
   [Answer: See last pa paragraph of Section 6.5]
5. How is Structural Adjustment related to social infrastructure.
   [Answer: See second paragraph of Section 6.7]

Questions Carrying 10 marks

1. Can infrastructure be classified as public good-discuss.
   [Answer: See Section 6.4]
2. What is the significance of infrastructure in any economy?
   [Answer: See Section 6.5]
3. Discuss the role and importance of infrastructure in any economy.
   [Answer: See Section 6.6]
4. Write a short note on India's performance in developing social infrastructure.
   [Answer: See Section 6.7]
5. Discuss the new initiatives taken by GOI.
   [Answer: See last Section 6.7]

6.11 References

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