CHAPTER : XV

SOCIAL AND ECONOMIC OVERHEADS

Social overhead capital or infrastructure may be defined as widespread capital goods used directly or indirectly in the production of goods and services. Social overhead capital is occasionally broken down into economic and purely social overhead capital. Economic overhead capital consists of public utilities - transport, including ports, roads, railroads, electricity and gas production capacity, pipelines, transmission lines, communication network, etc. One can also include the buildings needed for government, fire and police protection, facilities to maintain roads, etc. Strictly social overhead capital includes the plant and equipment required for shelter, education, and public health.

Infrastructure has far-reaching involvement in the economy. Firstly, it envisages those basic services and public utilities which are indispensable for various kinds of economic activities in primary, secondary and tertiary

sectors. Thus, it encompasses all public services from law and order through education and public health to transportation communication, power and water supply, as well as such agricultural overhead capital as irrigation and canal system.

According to Hirschman, the two basic channels of investment are social overhead capital (SOC) and directly productive activities (DPA). SOC has a multi-purpose character and miscellaneous applications. Basically, three conditions must be fulfilled by any activity to be categorized as infrastructure. Firstly, the services provided by the SOC activity facilitates, or are in some sense basic to the carrying on of a great variety of economic activities. Secondly, the services are provided by the public agencies free of charge or at rates regulated by public agencies. Thirdly, the services cannot be imported.

SOC have several characteristics which make government involvement necessary. First, these capital goods

are in one degree or another "public goods", which means that consumers preference for them will not be rewarded accurately through market processes. Second, most of the residents of a country will benefit from such things as better sanitation, lower transportation costs, etc. Third, some SOC are "lumpy" that is, if the project is to be economically viable, it must be a large one. Vast projects require the mobilization of substantial sums of money, something very difficult to do in the private sector because of weak financial markets, especially in developing countries. And even if such large sums could be mobilized, private investors would be reluctant to put their funds into SOC projects whose pay off period is very long. Further, because of the principle of maximum social benefit governing SOC the benefits are also procurred by those who are unable to pay. Infrastructure is capital-intensive, covers more than one economic sector or geographical region, and can normally be promoted by the government only.

The importance of economic infrastructure is well recognised. The infrastructural improvement of any

particular region is accountable for nurturing and sustaining the process of economic development. A certain minimum prior build-up of economic infrastructure is always needed for the development of the necessary spread effects in the leading sectors. The scale of this prior minimum build-up would vary from economy to economy depending on its previous history, geography, resources, etc. Enhanced availability of economic infrastructure such as electric power and transportation facilities are essential preconditions for economic development. Although, in some cases, it does not have a direct bearing on the final product, it permits and induces direct productive activities. Improved transportation and communications network stimulate economic growth by making product and factor markets function more efficiently. Labour and other factors of production become more mobile, farmers spend less time and money in marketing their produce and can choose from a wider range of potential buyers, and traditional obstacles to both growth and development are broken down as individuals and communities are more exposed to different ideas and institutions and become aware of possibilities for

social change. The extent to which transportation and communications projects contribute to economic development is often difficult to determine. It is indisputable that there is a positive correlation between infrastructure development and economic progress.

Transport is an essential economic infrastructure for the rapid development of any region. In a planned economy, location of industries, development of backward areas, decentralization of economic activities, better distribution of products, better maintenance of law, order, justice and defence— all necessitate a proper system of transport. The lack of transport facilities retards the process of economic development because even if a region is endowed with rich natural resources their availability and utilization may not always coincide. Hence, the development of transport facilities is a necessary pre-condition for economic and social development.

According to Coyle and Cavinato, the role and significance of transportation in the economy is

exceedingly important on many considerations: historical, economic, environmental, social, and political. Transport network has always monitored the trend of development. Historically, transportation has provided the foundation for communications, trade and commerce, and national defence. Economically, the transport network open up the hinterland and widens the markets. Environmentally, it is instrumental in maintaining the relative levels of ecological and environmental pollution. Socially, it determines the trends of urbanisation, population shifts and levels of employment. Politically, transportation is vital to national defence and social security.

Geographers identify six modes of transport — roads, railways, waterways, ropeways, airways and pipelines. Road and rail facilities are by far the most important types of SOC in the transport sector of most economies. According to Jeremy Benthan "Roads are the viens and arteries of a country through which channels every improvement circulates." According to W.W.Rostow, railroad was the "Leading Sector" in

the economic "take off" of most developed countries. Whether it be through road or by railways access to an area by any kind of economic infrastructure is indispensably required for gearing up the other economic activities.

A good transport system promotes economic efficiency of the region by enhancing accessibility to productive resources and physical mobility of the raw materials, finished products and factors of production. It increases the scale of production and helps establish strong economic linkages. Furthermore, it enhances adoption and coverage of modern technology and growth and diversification of demand for finished products.

Transportation costs are also crucial for determining the ability of a country to sell products in world markets. A country with high transport costs can enter that market only if production costs are relatively low. Therefore, to reduce transportation costs a properly coordinated transportation network is necessary. Effective coordination

between roads and railways, avoiding competition, and working as complimentary can help to achieve the purpose of low costs.

A country's road transport network consists of primary roads i.e. highways connecting major centres, secondary roads connecting smaller urban areas to the primary road network, and local serviced roads connecting the secondary roads. The highway and road transport network is very important for a vast country like India. They open up the hinterland and bring it closer to markets, railheads and ports. In contrast with other modes they provide safe, damage-free and door-to-door service and therefore economise on both cost and time. The intricate network knits up villages and countryside with urban and commercial centres. They are complementary to other modes of transport and together make up the national transportation network. The road transport structure provides greater flexibility and is directly accessible to a larger number of persons engaged in farming, commerce and industry. In high altitude hilly areas roads are the principal means of transportation.

Nevertheless, railroads still tend to be
more efficient than road transport for moving large volumes of relatively low-value cargo over long distances. Further the linkage effect of the railways with the rest of the economy is positive. To use Hirschman's terminology, in the case of railways, the backward linkages are to the coal, iron and engineering industries which provide inputs to railway construction, while the forward linkages are to those industries whose growth is stimulated by the availability of rail transport services. The railways play a dominant role in freight transportation and is significant passenger conveyance.

The railways account for a substantial investment and ranks as one of the most important sector in the economy both from the standpoint of invested capital and as an employer.

In addition to the mobility of goods, services and passengers, it is crucial for information to be promptly communicated. For this a capable telecommunication set-up is mandatory. Recent advances in telecommunication have 9. A.O. Hirschman, Op.Cit.
bridged the distances and have become a quick, easy and inexpensive mode of contact. The basic telecommunication facilities are the public telephone network, telex, telegraph and postal services. There is a strong demand for telecommunication services in most developing countries as indicated by the backlog of requests for telephone connections. New subscribers in some countries must sometimes wait several years to obtain the facility.

According to the world bank report the return on investment to expand the telecommunications network is sometimes close to 50 per cent. It is nevertheless difficult to determine the contribution of telecommunication to economic growth. While the services provided clearly improve the operation of product and factor markets by facilitating contacts between buyers and sellers they often serve final consumption purposes rather than investment purposes. Determining the marginal productivity of investment in telecommunications, compared to other types of SOC, is thus difficult.

The need of energy for a developing country cannot be under-estimated. Development needs a big quantum of energy. It is the basic input required to sustain economic growth and to provide basic amenities of life to the masses. Energy is the most important single factor the shortage whereof can act as a severe constraint on economic growth. Energy supply can be broadly divided into two categories, viz., commercial and non-commercial. The main source of commercial energy are coal, petroleum and electricity while the non-commercial energy sources comprise fire-wood, charcoal, vegetable-waste, dried cow-dung and bio-gas. Nuclear energy has yet to make a significant contribution in the UDCs.

There is a direct correlation between the degree of economic growth, the size of per capita income and per capita consumption of energy. Since energy is an essential input in all productive economic activity, the process of economic development inevitably demands increasingly higher levels of energy consumption. The greater the degree of economic growth and higher the per capita income of a country, the higher is its per capita energy consumption also. As energy sets the "basic foundation for the economic development
of a country the energy consumption is bound to increase over the years ".

The sectors of energy consumption may be classified as household sector, agriculture, industry, transport and other sectors. The industrial sector is the largest consumer of commercial energy, closely followed by the transport sector because of the extensive substitution of coal and by the replacement of steam locos by diesel and electric locos. Electric power is an essential component of economic development because of its diverse applications both in commercial as well as non-commercial spheres.

There are three main sources of generation of electric power viz, thermal power, hydel power and nuclear power. Of these hydro-electric power is a renewable natural resource. Thermal power which is generated by coal and oil has always been the major source of electric power though its significance is gradually coming down due to inadequacy of coal supply and more significantly owing to environmental pollution and like hazards.

11. Ruddar Dutt and K.P.M. Sundharam - Indian Economy, S.Chand and Co. Ltd.
Shortage of electric power can be a serious bottleneck to a country's industrial development. Establishment of new firms may be discouraged if an assured power supply is not available. Firms with prospects for high profit rates and access to suppliers credit can overcome this obstacle by importing their own generators, but the electricity so supplied will be costlier than that which could be supplied by a large public power facility. Such an alternative will result in a high cost economy which in turn will adversely affect the prices and thereby export prospects.

Electricity facilities in developing countries are highly concentrated in urban areas although it is increasingly being spread to the rural areas. Still most rural residents in developing countries do not have access to electric power. This not only deprives them of a consumer service that is an important component of welfare but also limits the scope for the development of scientific and modern agriculture and small rural industries. Measuring the benefits of electricity in rural areas is more difficult than in urban areas. To the extent that rural electrification permits the establishment of small-scale industrial enterprise and
provides power for irrigation pumps one should consider not only the direct benefits but also the secondary and indirect benefits, i.e., the multiplier effects of these benefits.

Education and health are important dimensions of welfare and government investment in such SOC can help to reduce inequalities of living standards. By improving the productivity of the labour force, investment in health services, nutrition programmes, and education can also have a positive impact on economic growth. These aspects have been discussed by us in a separate chapter.