



Chapter – 8

INFRASTRUCTURE

MEANING OF INFRASTRUCTURE

For the production and distribution of goods, we require physical capital such as factories, plants, machines, tools and implements etc., we also requires some services such as transport, communication, education, health etc. A kind of structure is required for production of such productive services. And this very structure is referred to as infrastructure.

NEEDS AND IMPORTANCE OF INFRASTRUCTURE

- 1. Infrastructure helps in the efficient utilisation of country's resources.**
- 2. Now the sale and purchase of various commodities become possible even in distant places.**
- 3. This increase the efficiency and mobility of Labour.**
- 4. This makes the supply of finance for economic development easy.**
- 5. The rapid development of the country largely depends on Sound infrastructural facilities, whether it may be agricultural sector or the Industrial sector, without infrastructure the output cannot be enhanced.**

CLASSIFICATION OR TYPES OF INFRASTRUCTURE

(A) Economic Infrastructure: Includes all those service - facilities which influence the production and distribution system from within and directly: These are (i) Energy (ii) Transport and (iii) Communication

(B) Social Infrastructure: This includes all those service - facilities which influence the economic processes indirectly. These are (i) Education (ii) Health

The main difference between social and economic infrastructure is that social infrastructure influences the production and distribution system from the outside while economic infrastructure influence it from within being a part of the system itself.

ENERGY

Significance

Energy is an essential input for economic development and improving the quality of life. It is required for the development of industries in the technology are much dependent on energy. Now industries in based on modern high increasingly is being energy used in agriculture and related areas like running tube wells, tractors, and thrashers. It is also required for domestic purpose also such as cooking, household, lighting and heating etc.

Sources of Energy

There are two principal catagories of the sources of energy:

Conventional and Non - Conventional sources.

1. Conventional Sources of Energy

They are further classified into two groups

(1) Commercial Sources of Energy: These sources are commercial in the sense that they command a price and the user have to pay for them. They consist of coal, oil, gas, water, radioactive

elements and electricity.

(ii) Non - Commercial Sources of Energy: They mainly consist of firewood, vegetable wastes and animal wastes. These sources are non - commercial because they are found in the nature / forests and hence they are supposed to be available without price. But now they have also started commanding a price especially in urban areas.

2. Non-Conventional Source of energy

Non-Conventional source of energy are basically renewable resource of energy. The government has accorded a high priority to promotion and utilisation of renewable resources of energy. The significant effort has been made for the development of renewable energy technologies. The ministry of Non- Conventional source was created in 1992 as the nodal agency of the Government of India for all matters relating to non-Conventional renewable energy.

India has today the world's largest programmes for renewable energy. Renewable energy provides the basis for sustainable energy development. It is because of the reason that it has inexhaustible nature and environment friendly features.

The main sources of non-conventional energy are:

(i) Bio-energy: - Bio energy refers to energy from organism or organic matters. It has two components (a) Biogas and (b) Bio-mass.

(ii) Solar energy -Solar is being used for water heating, cooking, lighting and for agricultural and industrial operations.

(iii) Wind energy: - wind power was generated through wind mills and was used for minor irrigation, agricultural operations and cutting of woods in the remote areas."

(iv) Ocean energy: - The Ocean acts as a natural collector of solar energy. The various forms of ocean energy are wave, ocean thermal conservation, current and tides.

(v) Energy from urban and industrial wastes: Efforts are being made for development of technologies to produce energy from urban and industrial wastes which are readily available.

CHALLENGES IN ENERGY

In the field of energy, India is facing many challenges.

1. Energy Crisis - The consumption of energy is increasing due to adoption of new technology and new life pattern. But the production of energy has not increased to the desired level. It has created a wide gap between demand and supply of energy. This gives rise to the problem of energy crisis in the country. Besides this, the continuous rise in oil prices by the OPEC Countries and growing oil import bills have also added to the problem of energy crisis. To overcome this problem we have to make two fold efforts: (i) increase in the Production of energy and (ii) Judicious consumption of Energy.

2. Conservation Energy: - Energy Conservation is the need of the life. We have to devise appropriate techniques and technologies and also change in our life pattern so that we can save as much energy as possible.

(3) Development of non-conventional sources of energy: we

are very much dependent on non-renewable source of energy like coal, oil, gas and hydroelectricity. Too much use of these energy sources may create problem for the future generation. It is therefore utmost essential that we must pay proper attention on the development of non-conventional source of energy in our country.

ELECTRICITY/POWER

Electricity is a versatile source of energy. It can be transmitted over long distances at a modest cost. Electricity is an essential ingredient of economic development. It plays an important role in commercial and non- commercial users.

Electricity can be generated mainly from three sources: Coal, water and radioactive elements. When power is generated by using Coal, it is known as thermal power. When we generated electricity from the water, it is termed as hydroelectric power and when power is generated from radioactive elements like uranium, thorium and plutonium, it is called nuclear power or atomic power.

A number of multipurpose projects came into being and with the setting up of thermal, hydro and nuclear power station, power generation started increasing significantly. The Ministry of power is responsible for the development of electrical energy in the country. The electricity generated as of two forms; utilities and non-utilities. When electricity is generated to sell in the market, it is called electricity generated (utilities). Whereas when electricity is generated by industries for self-consumption it is termed as electricity generated/Non-utilities). And such plants which produce non-utilities electricity are called Captive plants.

Hydel power has several advantages, such as it is most economical to and it is free from the problem of pollution. However, hydel projects take a long gestation as compared to thermal projects.

CHALLENGES OR PROBLEM FACED BY OUR ELECTRICITY SECTOR (OR POWER SECTOR)

The challenges, and the problem faced by our electricity sectors are

1. Problem of power shortage: - The government has, since independence, been always faced chronic power shortage. There are two basic reason for this priority to this sector. Despite this tremendous growth, India has Power shortage:

- a) A continuous, rise in the demand for electric power; and**
- b) Inadequate increase in the generation and distribution of power.**

In order to overcome this problem, effort are also required in the following directions:

- a) To keep the check on the unnecessary increase in demand for electricity and**
- b) To make sincere efforts to increase the quantum of power generation in the country.**

2. Poor performance of State Electricity board: - The critical problem area in the Power sector is the poor financial health and performance of the state Electricity boards. This is mainly due to uneconomic tariffs for agriculture, lower slabs of domestic consumption and high transmission and distribution losses, and low billing and collection efficiency.

3. Plant Load factor: - The plant load factor is an important measure of operational efficiency in the thermal power plant. There is

continuous improvement in the PLF". This is mainly due to a reduction in the weighted average of the generating stations, improvement in the design of the new units and better plant maintenance practices.

4. Power Grid: - In our country, primary sources of electricity power and power generation plants both are unevenly distributed. Electricity generation plant may be located at a particular place but its consumers may be residing at far away places. In this situation we have to transmit electronic powder over long distance. Besides, the transmission lines, are over loaded. As a result, there are frequent breakdowns and loss of powers in the Country.

In order to overcome all these difficulties, the Power Grid Corporation of India was incorporated in 1989. The mission of the corporation is establishment and operation of regional and national power grid to facilitate transfer of power within and across the region with reliability, security and economy. Now the Ministry of power envisages establishing an Integrated National power grid in the country by the year 2012.

5. Transmission and distribution losses: - Transmission and distribution Losses refers to electricity produced but not paid. The Current level of T& D losses is very high in our country. The main reason for high

T& D losses are

- a) Weak and inadequate transmission and distribution**
- b) Long transmission and distribution lines.**
- c) Inappropriate size of Conductors**
- d) improper load management**
- e) pilferage and theft of energy**

f) unmetered supply.

In order to reduce T&D losses privatisation of distribution work and introduction of energy audits are suggested.

6. Private Sector Participation: - In order to overcome the problem of power sector, the government announced a policy in 1991 which allowed private sector participation in power generation and distribution system.

7. Rural Electrification: - Rural electrification programme is a very important component in rural development. To achieve this objective, village electrification is now treated as basic minimum service under the Pradhan Mantri Gramodaya Yojana.

The Rural electrification Corporation was incorporated in 1969 with the main objectives of financing rural electrification scheme in the country.

VILLAGE ELECTRIFICATION

The definition of village electrification state that "A village will be electrified if electricity is used in the inhabited locality within the revenue boundary of the village for any purpose whatsoever. This definition of an electrified village is inadequate as it does not meet the requirements of the rural people.

HEALTH

Improvement in health is an essential element of human resources development, and for a better quality of life. Healthy person, on the other hand, contributes to the development of country by increasing

efficiency and productivity, and on the other hand, he is more able to enjoy the fruits of development.

State and Expansion of Health Infrastructure (Health facilities)

In the plan period since 1950-51, there has been considerable progress in health facilities. A brief description with regard to the progress of health facilities in India during plan period:-

Since Independence, there has been a significant expansion in the physical provision of health services. During 1951–2018, the number of government hospitals and dispensaries together increased from 9,300 to 53,800 and hospital beds from 1.2 to 7.1 lakhs. Also, nursing personnel increased from 18,000 to 30 lakh and allopathic doctors from 62,000 to 11.5 lakhs. The expansion of health infrastructure has resulted in the eradication of smallpox, guinea worms and the near eradication of polio and leprosy.

Indian Systems of Medicine (ISM):

It includes six systems—Ayurveda, Yoga, Unani, Siddha, Naturopathy and Homeopathy (AYUSH). At present, there are 4,095 AYUSH hospitals and 27,951 dispensaries and as many as 8 lakh registered practitioners in India. ISMs have huge potential and can solve a large part of our healthcare problems because they are effective, safe and inexpensive.

PRIVATE SECTOR HEALTH INFRASTRUCTURE

In India, private sector is playing an important role in the development of health infrastructure to provide health care to the people. At present more than 70% of the hospitals in the country are run by the private sector and nearly 60% of dispensaries are run by the private Sector Apart from it, private sector is also making significant contribution in medical education and training.

INDICATOR OF HEALTH AND HEALTH INFRASTRUCTURE

The main health indicators are: infant mortality rate, life expectancy, maternal mortality rate, nutrition levels and incidence of communicable and non-communicable diseases.

When we compare the health indicators of India with the other countries of the world, we find that India lags behind on all these parameters.

Global burden of disease (GBD) is also regarded one of the important health indicators to judge the state of health of a country. GBD is an indicator used to gauge the number of people dying prematurely due to a particular disease as well as the number of years spent by them in a state of disability owing to the disease. In our country, more than 50% of the GBD is accounted for communicable diseases.

Urban-Rural and Poor-Rich Divide

When we compare health care facilities of urban and rural areas we find that the rural sector does not have adequate health care facilities. India's 70% population lives in rural areas, but only 20% of its hospitals and 50% of dispensaries are located in rural areas.

Moreover, the primary health centres located in rural areas do not have even x-rays and blood testing facilities. In villages, we do not find any specialised medical care and there is a shortage of doctors in our rural areas. Thus, we find wide differences in the health status of the people living in rural areas and urban areas.

Status of women's Health

The health status of our country's women is also very poor compared to other countries of the world. The deterioration in the child sex ratio in the country from 927 in 2001 to 919 in 2011 points to the growing incidence of female foeticide.

PROBLEMS AND CHALLENGES OF HEALTH

There are certain problems and Challenges in the health sector that must properly and urgently be addressed.

1. Unequal distribution of Health Care Services: - Distribution of health care services is extremely unequal across rural and urban sector of the country. Most of the health care facilities have been confined to the urban areas.

2. Quality and accountability of health Care: In recent years, there has been increasing public concern over the quality of health care because of increasing awareness of population and the mushrooming of health care institution particularly in the private sector.

3. Poor water and sanitation facilities: - Water supply and sanitation are important basic needs for improvement of the quality of life and enhancement of productive efficiency of the people. Rapid urbanisation and industrialisation have multiplied the challenges for providing these basic amenities. The poor bear the burden of the non-availability of water, as well its poor quality. The condition of sanitation facilities are poor both in urban and rural areas, but it is worst in rural areas.

4. Low health care services in rural areas: - A majority of government and private sector hospitals are located in urban areas. Qualified and registered private sector institution are not readily available in remote rural areas and tribal areas because people do not have ability to pay. Thus, the population in these area where health care needs are the greatest have poor access to functioning government health services or private facilities.

5. Public private partnership: - There is a need to increase public-private Voluntary sector collaboration to meet the health care need of the poor and vulnerable segments of population.