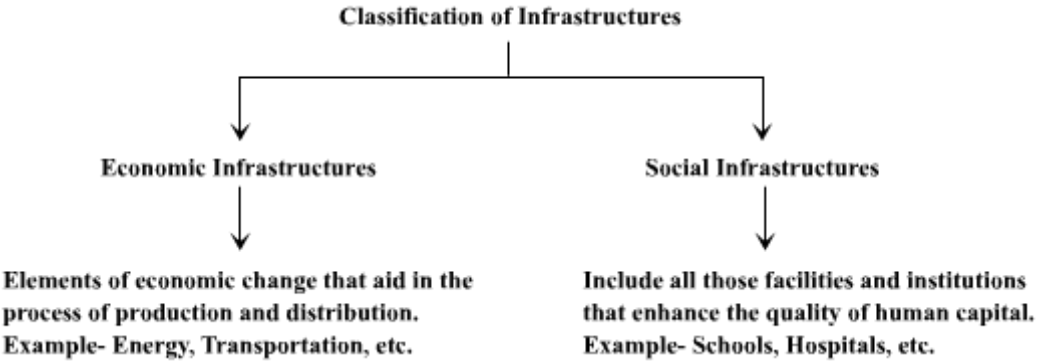
CHAPTER 8

INFRASTRUCTURE

❖ **Infrastructure** refers to the underlying tangible and organisational structures that are essential for the smooth and prosperous functioning of an economy. It serves as a support system to social and economic development of the society.

❖ **Classification of Infrastructure**



- While economic infrastructure fosters economic growth, social infrastructure enhances the quality of standard of living and enhances economic welfare.
- The combined effect of these two infrastructures contributes to the prosperity of the economy.
- Both economic and social infrastructure is inter-dependent.

❖ **Contribution of infrastructure in economic development of a country**

- Infrastructure **increases productivity**.
- Infrastructure **induces investment** by making environment conducive for investment.
- Infrastructure induces development by **generating forward and backward linkages**.
- Infrastructure **widens size of the market** by enabling fast and cost-effective movement of raw materials and finished goods in bulk.

❖ **Energy** is an important element of economic infrastructure. It is a lifeline of entire production activity.

❖ **Sources of energy**

- Commercial and Non-commercial
- Conventional and Non-commercial
- Primary and Final

❖ The sources of energy that are available to the users at some price are referred to **commercial sources of energy.** For example, coal, petroleum, natural gas, electricity, etc.

❖ The sources of energy that are sometimes available freely to the users are referred to **non-commercial sources of energy**. For example, firewood, agricultural waste, animal waste (cow dung), etc.

- **Conventional sources of energy** are those energy sources that are known and have been used by us for a long time. For example, coal, petroleum, natural gas, electricity, etc.

- **Non-Conventional sources of energy** are those energy sources that have been discovered in the recent past and their use is yet to gain popularity. For example, solar energy, wind energy, biomass, etc.

- The primary sources of energy are the sources of energy that are available in nature and need not be transformed into any other form before using them as an input in the production process. These can be classified as renewable and non-renewable energy. For example, coal, crude oil (renewable primary energy sources), solar energy, wind energy (non-renewable primary energy sources).

- **Final sources of energy** are those energy sources that are used as an end-product. For example, electricity, etc.

- The three basic sources of generating power are **thermal, hydro-electric, and nuclear power**.
  - **Thermal power** uses heat energy as its base for the production of electricity.
  - **Hydro-electric power** involves production of electricity through the use of kinetic force of falling water.
  - **Nuclear power** involves the use of sustained nuclear fission to generate electricity.
  - **The thermal sources**, **hydro-electric sources and nuclear power** accounts for 70%, 28% and 2% of the power generation capacity respectively in India.

- **Pattern of energy consumption In India**
  - The percentage use of different sources of energy is referred to **pattern of energy consumption.**
  - It is only analysed only when different energy sources are converted into a common unit, which is termed as MTOE (Million Tonnes of Oil Equivalent) in India.
  - The non-commercial use of this energy has increased from 36 % to 76% in 1953-54 to 2004-05 respectively.
  - The percentage of direct final consumption of coal has drastically reduced irrespective of the increase in the total consumption of coal.
  - The consumption of oil has increased substantially.

- **Sectoral Share of Energy Consumption in India**
  - The consumption of electricity in the agricultural sector has increased significantly overtime, whereas industrial sector accounts for the highest share in the total consumption of the energy.
  - The economic sectors include primary sector (agriculture), secondary sector (industries) and tertiary sector (such as transport and communication, etc.)
  - The consumption of industrial sector is nearly 37.8 % (majority share) of the total consumption of the commercial energy.
  - The lowest energy consumption is accounted by the agricultural sector i.e., nearly 21.9 % of the total energy consumption.
  - There has been a considerable fall in the percentage of energy consumption by the transportation sector.

❖ **Challenges in Power Generation**

- **Excess of demand over supply of electricity** (or inadequate power supply) is a major challenge.
- **Underutilisation of production capacity** (as denoted by Plant Load Factor (PLF)) should be increased.
- **Losses incurred by State Electricity Boards (SEBs):** The State Electricity Boards (SEBs) that distribute electricity suffered a great loss of more than Rs.500 billion due to transmission and distribution of electricity (losses that occur in transmission between the sources of supply and points of distribution of electricity).

❖ **Coping with Challenges in the Power Generation**

In order to cope with the challenges in the power generation, government should aim at following measures.

- Emphasis on the measures to improve the productivity of the existing power generating industries.
- **T & D losses** can be minimised by repairing and overhauling of the malfunctioning transmission channels and networks.
- **Enhancing the supply of inputs to power plants-** Thermal power stations face scarcity of raw materials to generate electricity, so regular and uninterrupted supply of inputs should be focused upon.
- **Privatisation of power generation** will add to operational and distributional efficiency.
- **Creating public awareness** to increase the use of renewable resources and judicious use of conventional resources of energy.

❖ **Health** (an important component of social infrastructure) is the state of complete physical, mental and social well being.

❖ **Health: Emerging Challenges in Health Sector in India**

- **Inequality in the distribution of health care services** across rural and urban areas.
- Modern health facilities and techniques are confined only to the urban areas, while rural areas are devoid of such facilities.
- **Privatisation** of the health sector favoured the high income group of population at the cost of poor and low income group.
- Government hospitals are usually devoid of modern techniques and medical facilities such as, CT-scan, sonography, etc.
- Health care facilities in the rural areas **lack trained and skilled management** and personnel.
- The **inadequate investment in the health sector** and inefficient information system has paved way for the deadly communicable diseases such as AIDS (Acquired Immune Deficiency Syndrome), HIV (Human Immune Deficiency Syndrome), SARS (Severe Acute Respiratory Syndrome), etc.