Economic Infrastructure

Meaning and Components of Infrastructure

Infrastructure refers to the supporting services in the main areas of industrial and agricultural development, trading and commerce. It includes roads, railways, ports, airports, dams, telecommunication, schools and hospitals.

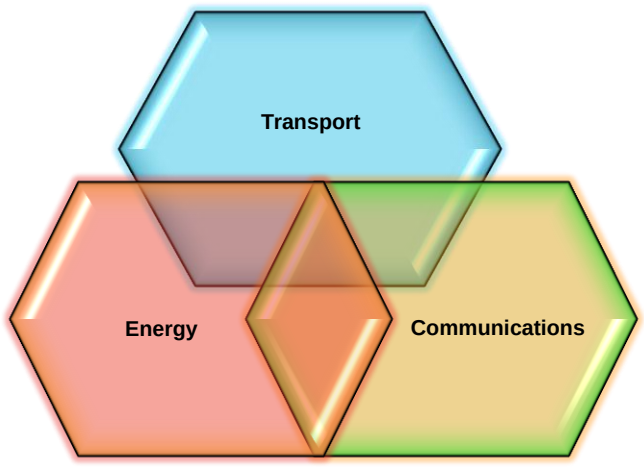
Basic qualities of infrastructure:

- Infrastructure is the foundation of all activities.
- Supplies the basic input for the production process.
- Installed infrastructure can be used for long periods.
- Enhances the productivity in an economy.

Economic infrastructure refers to all such elements of economic change which serve as a foundation for the process of economic growth. It consists of services which affect the production and distribution directly. It is located within the system of production and distribution. Examples: Irrigation facilities, transport and communication, banking

Social infrastructure consists of services which contribute to the economic processes indirectly, i.e. those services which affect the system of production and distribution from outside. Examples: Health, education and training

Economic Infrastructure of the Indian Economy



Transport System

Transport refers to movement from one place to another. Roadways, railways, waterways and airways are the four important modes of transport. Important points of the transport system:

- Helps to broaden the market for agricultural and industrial goods.
- Enables the movement of goods and services which not only helps internal trade but also supports international trade.
- Helps to promote the tourism industry which in turn helps to earn foreign exchange.
- Generates many employment opportunities in recent years.

Rail Transport

Railways are the most important form of transport. Indian Railways are the country's single largest undertaking and ranks fourth in the world. It is increasingly modernised in the following ways:

- The railway network is electrified to provide faster, safer and pollution-free transport at low cost.
- Steam locomotives have been replaced by electric and diesel engines.
- The quality of tracks has been improved.
- The work of converting metre gauge into broad gauge has been progressed.
- Adarsh Station Scheme is provided with basic facilities such as catering services, drinking water, waiting rooms and well-maintained toilets.
- Linke Hofmann Busch coaches, more capacity, better riding facilities and improved safety measures are being introduced in train services.

Problems faced by Indian Railways:

- There is no emphasis to construct new lines which led to the problem of overcrowding. The mileage per lakh population is 96 km as against 224 km in the USA and 465 km in Canada.
- Tracks are old and outdated as there is a difficulty of renewal and upgradation of tracks.
- Indian Railways with 16 lakh employees are the largest employer among all public or private sector undertakings. Rising wage bill is a burden rather an asset for the country.
- Indian Railways concentrated on bulk freight from the core sector, ignored high value non-bulk sectors and hence lost valuable revenue.
- It has to incur about Rs 500 crore loss every year because of widespread corruption, theft and ticketless travelling.

Road Transport

Roads play an important role in a thickly populated country like India. After Independence, during the planning period, roads have developed considerably. India presently has a total road length of 46.9 lakh km. Our rural road network connects nearly 70% of villages.

- Road transport can reach the interior part of villages and it enables the farmers to maintain contacts with the markets for procuring inputs and selling their produce.
- Construction of roads and road transport generates sizeable employment opportunities.
- Required raw materials reach the factories and their manufactured produce to consumers through roads and road transport.
- A variety of vehicles such as trucks, buses, motor cars, bullock carts, tongas and cycles are operated on roads.

Indian roads have been classified as

- National highways: These are the main roads of the country which connect the state capitals, ports and cities. Construction and maintenance of these roads is the responsibility of the central government. The National Highway Authority of India is responsible for the development of these

roads. Although National Highways constitute barely 1.7% of the total length of roads, they bear 40% of the total road transport.

- State highways: These roads are the main roads of the states. These connect the capital of the state and the cities of the states with the national highways. State governments are responsible for their construction and maintenance. Their total length is 163900 km.
- District roads: These roads connect district mandis and production areas with the state highways and railway stations. These are constructed and maintained by district boards.
- Village roads: These roads connect the villages with district roads. Panchayats construct and maintain these roads.

Several problems faced by road transport in India:

- Because India has a large population, the road network is inadequate to tackle such a large population.
- About half of the roads are unmetalled roads, and hence, their use becomes restricted during the rainy season.
- The number of national highways is also not enough keeping in mind the large population of the country.
- In cities, roads are highly congested. Sometimes the encroachment of the road by hawkers and vegetable sellers also results in congestion.
- The passing of heavily loaded trucks which carry loads above the prescribed limit also damages the roads in the long run.

Water Transport

Inland water transport and shipping are the two major modes of water transport in India.

- Inland water transport is a cheap and energy-efficient transport for bulky goods. It is limited to certain rivers such as Ganga, the Brahmaputra, the canals and the deltas of Krishna and Godavari. Tamil Nadu, Kerala, Andhra Pradesh, Odisha, West Bengal and Uttar Pradesh are noted for inland water transport. A Central Inland Water Transport Corporation Ltd. was set up in 1967 to manage national highways and the Inland Waterways Authority of India was set up in 1986 to coordinate and implement various central schemes for development of national waterways.
- Indian shipping companies faced tough competition from foreign companies. Ports are a key component of infrastructure on the 7516-km long seacoast of India. The 12 major ports are Chennai, Cochin, Ennore, Jawaharlal Nehru, Kandla, Kolkata, Mormugao, Mumbai, New Mangalore, Paradip, Tuticorin and Visakhapatnam. They are governed by the Ports Trust Act under the control of the central government.
- Problems of water transport are inadequate tonnage capacity and infrastructure facilities such as ship repair facilities, dry docking and cargo handling. They have to face tough competition from giant international companies.

Air Transport

Air transport is the fastest means of transport. It is also a prestigious and comfortable means of transport. One can fly directly over 6000 km. Regions covered with dense forests, deserts and high mountains have easily become accessible because of air travel. The air force defends the country against any foreign threat. In case of natural calamities like floods, when roads cannot be used, relief work is carried out with the help of helicopters.

The Civil Aviation Department was set up in 1927, the Air Transport Enquiry Committee was set up in 1950 and the Air Corporation Act was passed in 1953. Air India International and Indian Airlines were established in accordance with this Act. Later on, two new airlines, i.e. Vayudoot was started in 1981 to connect the inaccessible areas in the northeastern regions with the rest of the country and Pawan Hans was started in 1985 as the Helicopter Corporation of India. Currently, the Airports Authority of India controls the domestic and international airports of the country.

Problems of air travel in India:

- It is the costliest means of transport and hence is out of the reach of the common people.
- Unlike roads and railways, airways have still not been connected to the smallest cities.
- Because of crime, terrorism and hijacking, the risk of air travel in India is increasing enormously.
- Facilities to train a large number of pilots is lacking in India.

Communications

A communication network is essential for the development of an economy. It comprises post and telegraph, telecommunication, broadcasting, television and information services.

- Postal services: Postal services made a remarkable progress during the planning period. In India, the postal department was set up in 1854. Railway Mail Service and Air Mail Service were started in 1907 and 1911, respectively. Currently, there are 1,55,516 post offices in India. Of these, 90% are in the rural sector. The long-term objective of the Post and Telegraph Department is to have post office services within 3 km of every village and to provide a letter box facility in every village with a population of 500. Nearly, 6 lakh people are employed in the Post and Telegraph Department.
- Telecommunications: The telephone system has been upgraded technologically. International Subscriber Dialling (ISD) facility, digital telephones, electronic exchanges and cordless instruments have been introduced. Fax service enables the immediate transmission of a page to different parts within or outside the nation. The Internet is a global system of interconnected computer networks. World Web Wide (WWW) has been providing services on information, communication and data transfer. Any information can be accessed through the Internet.

Energy

Energy is an important aspect needed for the development of an economy. It is widely used for large-scale production and advanced technology in industries and is also used in agriculture and allied activities such as production, transport and fertilisers. It is also useful for cooking, heating and lighting the house.

Conventional Sources of Energy

Conventional sources of energy refer to those resources which have been in use since a very long time. The two types of conventional sources of energy are commercial sources and non-commercial sources of energy.

Commercial Energy	Non-commercial Energy
Commercial energy is energy which is available to users at some price.	Non-commercial energy is energy which is available free of cost to users.
It is used for commercial purposes in factories and farms.	It is used for domestic and consumption purposes.
This is a non-renewable form of energy.	It is a renewable form of energy.
Examples: Coal, petroleum, natural gas, electricity	Examples: Firewood, agricultural waste, cow dung

- Coal and lignite: In India, the total reserves of coal in India are placed at about 191.8 billion tonnes, but the mineral reserves are nearly 144 billion tonnes. This coal is mainly used by thermal power stations; railways; cement, steel and fertiliser plants and brick kilns. Lignite is brown coal with lesser amount of energy than black coal which is mostly found in Neyveli in Tamil Nadu. Most of this lignite is used by thermal power stations.
- Petroleum: During the plan period, the crude oil production has been constantly increased. The crude oil production was just 0.26 million tonnes in 1950–51 and it has been increased to 37.7 million tonnes in 2010–11. Directorate of Oil and Natural Gas was set up in 1956. The Oil and Natural Gas Commission was set up in 1959.
- Natural gas: The production of natural gas in 2005–06 is nearly 32 billion cubic metres. It is used in fertiliser and petrochemical plants and gas-based thermal power plants. Gas Authority of India was set up in 1984.
- Electricity: The most visible form of energy which is often identified with progress in modern civilisation is power, commonly called electricity. It is a critical component of infrastructure which determines the economic development of a country. The basic sources of energy generation:
  - Thermal power: 81% of the total power generation is derived from thermal power. It is mostly derived from coal, and only a small fraction comes from oil.
  - Hydroelectric power: 20% of the total power generation is derived from hydroelectricity plants as against 92.7% in Brazil and 74.1% in New Zealand.
  - Nuclear power: India has set up nuclear power stations at Tarapur, Kota (Rajasthan), Kalpakkam (Tamil Nadu) and Narora (UP).

Non-conventional Sources of Energy

According to the Department of Non-conventional Energy Sources, there are new sources of renewable energy which are called non-conventional sources of energy to meet the increasing demand of energy in the economy. They are bioenergy, solar energy, wind energy and micro hydel power.

- Bioenergy is obtained from organic matter which consists of two types—biogas and biomass. Biogas is obtained from a gobar gas plant. It can be used for cooking and lighting. Biomass is a source of production energy through plants.
- Solar energy is produced through the light of the Sun. This energy meets the requirements of people in villages.
- Wind energy is generated by using wind power, and it is inexhaustible. The government implemented the world's largest Wind Resource Assessment Programme to support the wind energy programme in a country. A centre for Wind Energy Technology has been set up at Chennai to promote the wind power sector in the country.

- Micro hydel power projects were set up by the Government of India which is based on waterfalls, canals, small rivers and streams.

Irrigation

India is an agricultural economy which depends on the availability of water in sufficient quantity. Currently, nearly 42% of the total cultivable land has irrigation facilities. The remaining cultivable land depends on rains which are unpredictable. Therefore, it becomes essential to have a proper irrigation system. The sources of irrigation in India are wells, tanks and canals. The total irrigation potential has increased from 26 million hectares in 1950–51 to 102.8 million hectares in 2006–07. Accelerated Irrigation Benefits Programme was launched in 1996–97 to give loan assistance to the states for the completion of irrigation projects.

Banking and Other Financial Institutions

The Indian banking system can be classified into two categories—organised and unorganised banking. Unorganised banking includes indigenous banks and moneylenders which are not regulated by the Reserve Bank of India. On the other hand, organised banking is a bank regulated by the Reserve Bank of India. They are commercial banks, cooperative banks, development banks and non-banking financial Institutions.

Advantages of a Bank Account

- Interest income created: Small savers earn an interest on their savings when they deposit money in the bank. Hence, depositing money in a bank generates income rather than holding idle money.
- Mobilisation of small savings: Bank accounts help in mobilising the small savings of a vast segment of people. Further, these amounts are transferred for productive investment.
- Safe transactions: Bank transactions such as issuing of cheques for the purchase of goods are very easy to perform. These bank transactions remain as evidence if a dispute arises between the borrower and the lender.
- Secured deposit and easy withdrawal: Bank accounts are a safe place to store money and to withdraw the amount when required.

Role of Banks in the Industrial and Commercial Life of a Country

Banks help traders and industrialists by providing financial assistance. Their cheques and drafts are useful for trading on a large scale.

- These banks accept deposits from the people who have surplus amount and provide loans to investors who are in need for productive activity. Thus, they encourage savings and promote production activities by investing them.
- Banks help in the distribution of surplus capital from regions where it is abundant to regions with scarcity.
- It provides concessional loans to the priority sectors such as agriculture, small-scale industry, retail trade and export.

Central Bank

The Reserve Bank of India is the Central Bank of the country and controls the whole banking system. It has the sole authority to issue notes in the country. It acts as a banker to the government and controls the supply of money in the country.

Commercial Bank

Commercial banks have been established under the Companies Act, 1913. The main function of a commercial bank is to accept deposits from the public and lend money to business firms. *State Bank of India* is the largest commercial bank in India. These banks are broadly classified into public sector banks, private sector banks and regional rural banks.

- Public sector banks: Public sector banks are owned and managed by the government. It includes *State Bank of India* and its subsidiaries and 19 nationalised banks such as *Bank of India* and *Punjab National Bank*.
- Private sector banks: Private sector banks are owned by private individuals. These include foreign banks, old private sector banks and new private sector banks. Currently, it comprises 38 foreign banks with 321 branches all over the world such as *Citibank* and *HSBC*.

Cooperative Bank

Cooperative banks or cooperative credit societies are a formal source of credit. These banks were originally set up at the village level to promote savings by farmers and to meet their credit requirements. The rate of interest charged by cooperative societies is much lower than that charged by informal moneylenders. These banks are based on the three-tier system. State cooperative banks act as an apex institution in the state, central cooperative banks work at the district level and the primary credit society at the village level.

Mutual Fund

A mutual fund is an institution which sells its own stock. Mutual funds mobilise savings from particularly the middle class and small savers. *Unit Trust of India* is the first mutual fund in India which was set up in 1964.