Name: _____

Date: __/__/__

What is Infrastructure?

Infrastructure provides supporting services in the main areas of industrial and agricultural production, domestic and foreign trade and commerce. These services include roads, railways, ports, airports, dams, power stations, oil and gas pipelines, telecommunication facilities, the country's educational system including schools and colleges, health system including hospitals, sanitary system including clean drinking water facilities and the monetary system including banks, insurance and other financial institutions.

Some of these facilities have a direct impact on the working of the system of production while others give indirect support by building the social sector of the economy

Relevance of Infrastructure

Infrastructure is the support system on which depends the efficient working of a modern industrial economy. Modern agriculture also largely depends on it for speedy and large-scale transport of seeds, pesticides, fertilisers and the produce by making use of modern roadways, railways and shipping facilities.

Infrastructure contributes to economic development of a country both by increasing the productivity of the factors of production and improving the quality of life of its people. Inadequate infrastructure can have multiple adverse effects on health.

Improvements in water supply and sanitation have a large impact by reducing morbidity (meaning proneness to fall ill) from major waterborne diseases and reducing the severity of disease when it occurs. In addition to the obvious linkage between water and sanitation and health, the quality of transport and communication infrastructure can affect access to health care. Air pollution and safety hazards connected to transportation also affect morbidity, particularly in densely populated areas.

The State of Infrastructure in India

Most of our people live in rural areas. Despite so much technical progress in the world, rural women are still using bio-fuels such as crop residues, dung and fuel wood to meet their energy requirement.

They walk long distances to fetch fuel, water and other basic needs. The census 2001 shows that in rural India only 56 per cent households have an electricity connection and 43 per cent still use kerosene. About 90 per cent of the rural households use bio-fuels for cooking. Tap water availability is limited to only 24 per cent rural households.

About 76 per cent of the population drinks water from open sources such as wells, tanks, ponds, lakes, rivers, canals, etc. Another study conducted by the National Sample Survey Organisation noted that by 1996, access to improved sanitation in rural areas was only six per cent.

Though it is widely understood that infrastructure is the foundation of development, India is yet to wake up to the call. India invests only 5 per cent must boost its infrastructure investment. In any country, as the income rises, the composition of infrastructure requirements changes significantly.

For low-income countries, basic infrastructure services like irrigation, transport and power are more important. As economies mature and most of their basic consumption demands are met, the share of agriculture in the economy shrinks and more service related infrastructure is required. Therefore, the share of power and telecommunication infrastructure is greater in high-income countries.

Thus, development of infrastructure and economic development go hand in hand. Agriculture depends, to a considerable extent, on the adequate expansion and development of irrigation facilities. Industrial progress depends on the development of power and electricity generation, transport and communications

Some Infrastructure in India and other Countries, 2003

Country	*Investment in Infrastructure as a % GDP*	*Access to Safe Drinking Water (%)*	*Access to Improved Sanitation (%)*	*Mobile Users/ 1000 People*	*Phone Lines/ 1000 People*	*Power Generation (kw 1000)*
China	20	75	38	66	113	230
Hong Kong	4	100	100	817	560	1630
India	**5**	**84**	**28**	**4**	**33**	**107**
Korea	7	92	63	583	449	1067
Pakistan	2	90	62	2	20	109
Singapore	5	100	100	684	528	1887
Indonesia	14	76	66	18	28	97

Source: *World Development Report 2005, The World Bank, Washington DC, 2004.*

Energy

Energy is a critical aspect of the development process of a nation. It is, of course, essential for industries. Now it is used on a large scale in agriculture and related areas like production and transportation of fertilisers, pesticides and farm equipment. It is required in houses for cooking, household lighting and heating.

Sources of Energy – Non-Conventional

Both commercial and non-commercial sources of energy are known as conventional sources of energy. There are three other sources of energy which are commonly termed as non-conventional sources — solar energy, wind energy and tidal power. Being a tropical country, India has almost unlimited potential for producing all three types of energy if some appropriate cost-effective technologies that are already available are used. Even cheaper technologies can be developed.

Consumption Pattern

At present, commercial energy consumption makes up about 65 per cent of the total energy consumed in India. This includes coal with the largest share of 55 per cent, followed by oil at 31 per cent, natural gas at 11 per cent and hydro energy at 3 per cent. Non-commercial energy sources consisting of firewood, cow dung and agricultural wastes account for over 30 per cent of the total energy consumption. The critical feature of India's energy sector, and its linkages to the economy, is the import dependence on crude and petroleum products, which is likely to grow to more than 100 per cent soon.

The transport sector was the largest consumer of commercial energy in 1953-54. However, there has been continuous fall in the share of the transport sector while the share of the industrial sector has been increasing. The share of oil and gas is highest among all commercial energy. With the rapid rate of economic growth, there has been a corresponding increase in the use of energy.

Trends in Sectoral Share of Commercial Energy Consumption (in %)

Sector	*1953-54*	*1970-71*	*1990-91*	*1996-97*
Household	10	12	12	12
Agriculture	01	03	08	09
Industries	40	50	45	42
Transport	28	22	22	22
Others	5	07	13	15
Total	**100**	**100**	**100**	**100**

Source: *Ninth Five year Plan, Vol. II Chapter 6, Planning Commission, Government of India, New Delhi.*

Power Sector

The most visible form of energy, which is often identified with progress in modern civilization, is power, commonly called electricity; it is one of the most critical components of infrastructure that determines the economic development of a country. The growth rate of demand for power is generally higher than the GDP growth rate. Studies point that in order to have 8 per cent GDP growth per annum, power supply needs to grow around 12 per cent annually.

Electricity generated by various power stations is not consumed entirely by ultimate consumers; a part is consumed by power station auxiliaries. Also, while transmitting power, a portion is lost in transmission. What we get in our houses, offices and factories is the net availability.

Some of the challenges that India's power sector faces today are

(i) India's installed capacity to generate electricity is not sufficient to feed an annual economic growth of 7 per cent. To meet the growing demand for electricity, between 2000 and 2012, India needs to add 1,00,000 MW of new capacity, whereas, at present, India can add only 20,000 MW a year. Even the installed capacity is underutilised because plants are not run properly

(ii) State Electricity Boards (SEBs), which distribute electricity, incur losses which exceed Rs 500 billion. This is due to transmission and distribution losses, wrong pricing of electricity and other inefficiencies. Some scholars also say that distribution of electricity to farmers is the main reason for the losses; electricity is also stolen in different areas which also adds to the woes of SEBs

(iii) Private sector power generators are yet to play their role in a major way; same is the case with foreign investors

(iv) There is public unrest due to high power tariffs and prolonged power cuts in different parts of the country

(v) Thermal power plants which are the mainstay of India's power sector are facing shortage of raw material and coal supplies.

More public investment, better research and development efforts, exploration, technological innovation and use of renewable energy sources can ensure additional supply of electricity. Though the private sector has made some progress, it is necessary to tap this sector to come forward and produce power on a large scale.

Health

Health is not only absence of disease but also the ability to realise one's potential. It is a yardstick of one's wellbeing. Health is the holistic process related to the overall growth and development of the nation. Though the twentieth century has seen a global transformation in human health unmatched in history.

State of Health Infrastructure

The government has the constitutional obligation to guide and regulate all health related issues such as medical education, adulteration of food, drugs and poisons, medical profession, vital statistics, mental deficiency and lunacy. The Union Government evolves broad policies and plans through the Central Council of Health and Family Welfare. It collects information and renders financial and technical assistance to state governments, union territories and other bodies for implementation of important health programmes in the country.

Since independence, there has been a significant expansion in the physical provision of health services. During 1951-2000, the number of hospitals and dispensaries increased from 9,300 to 43,300 and hospital beds from 1.2 to 7.2 million; during 1951-99, nursing personnel increased from 0.18 to 8.7 lakh and allopathic doctors from 0.62 to 5.0 lakh. Expansion of health infrastructure has resulted in the eradication of smallpox, guinea worms and the near eradication of polio and leprosy

Public Health Infrastructure in India, 1951-2000

Item	*1951*	*1981*	*2000*
Hospitals	2694	6805	15888
Hospital/ dispensary beds	117000	504538	719861
Dispensaries	6600	16745	23065
PHCs	725	9115	22842
Subcentres	-	84736	137311
CHCs	-	761	3043

Source: *National Commission on Macroeconomics and Health, Ministry of Health and Family Welfare, Government of India, New Delhi, 2005.*

Pvt Sector Healthcare

In recent times, while the public health sector has not been so successful in delivering the goods about which we will study more in the next section, private sector has grown by leaps and bounds.

More than 70 per cent of the hospitals in India are run by the private sector; they control nearly two-fifth of beds available in the hospitals. Nearly 60 per cent of dispensaries are run by the same private sector. They provide healthcare for 80 per cent of outpatients and 46 per cent of in-patients.

In 2001-02, there were more than 13 lakh medical enterprises employing 22 lakh people; more than 80 per cent of them are single person owned and operated by one person occasionally employing a hired worker. Scholars point out that the private sector in India has grown independently without any major regulation; some private practitioners are not even registered doctors and are known as quacks.

Indian Systems of Medicine (ISM)

It includes six systems: Ayurveda, Yoga, Unani, Siddha, Naturopathy and Homeopathy (AYUSH). At present there are 3,004 ISM hospitals, 23,028 dispensaries and as many as 6,11,431 registered practitioners in India. But little has been done to set up a framework to standardise education or to promote research. ISM has huge potential and can solve a large part of our health care problems because they are effective, safe and inexpensive.

Indicators of Health in India in Comparison with other Countries

Indicator	*India*	*China*	*USA*	*Sri Lanka*
Infant Mortality Rate/1,000 live births	68	30	2	8
Under-5 mortality /1,000 live-births	87	37	8	15
Birth by skilled attendants	43	97	99	97
Fully immunised	67	84	93	99
Health expenditure as % of GDP	4.8	5.8	14.6	3.7
Government share of total expenditure (%)	21.3	33.7	44.9	48.7
Government health spending to total government spending (%)	4.4	10	23.1	6
Per capita spending in international dollars	96	261	5274	131

Source: *World Health Report 2005*

Indicators of Health and Health Infrastructure—A Critical Appraisal:

As pointed out earlier, the health status of a country can be assessed through indicators such as infant mortality and maternal mortality rates, life expectancy and nutrition levels, along with the incidence of communicable and noncommunicable diseases. Some of the health indicators, and India's position, are given in Table 8.4. Scholars argue that there is greater scope for the role of government in the health sector. For instance, the table shows expenditure on health sector as five per cent of total GDP. This is abysmally low as compared to other countries, both developed and developing.

One study points out that India has about 17 per cent of the world's population but it bears a frightening 20 per cent of the global burden of diseases (GBD). GBD is an indicator used by experts to gauge the number of people dying prematurely due to a disease as well as the number of years spent by them in a state of 'disability' owing to the disease.

At present, less than 20 per cent of the population utilises public health facilities. One study has pointed out that only 38 per cent of the PHCs have the required number of doctors and only 30 per cent of the PHCs have sufficient stock of medicines.

Urban – Rural and Poor – Rich Divide

Though 70 per cent of India's population lives in rural areas, only one-fifth of its hospitals are in rural areas. Rural India has only about half the number of dispensaries. Out of about 7 lakh beds, roughly 11 per cent are available in rural areas. Thus, people living in rural areas do not have sufficient medical infrastructure.

Villagers have no access to any specialised medical care like paediatrics, gynaecology, anaesthesia and obstetrics. Even though 165 recognised medical colleges produce 12,000 medical graduates every year, the shortage of doctors in rural areas persists. While one-fifth of these doctor graduates leave the country for better monetary prospects, many others opt for private hospitals which are mostly located in urban areas.

Women's Health

Women constitute about half the total population in India. They suffer many disadvantages as compared to men in the areas of education, participation in economic activities and health care. The deterioration in the child sex ratio in the country from 945 in 1991 to 927, as revealed by the census of 2001.

Health is a vital public good and a basic human right. All citizens can get better health facilities if public health services are decentralised. Success in the long-term battle against diseases depends on education and efficient health infrastructure. It is, therefore, critical to create awareness on health and hygiene and provide efficient systems.

There is a sharp divide between the urban and rural healthcare in India. If we continue to ignore this deepening divide, we run the risk of destabilising the socio- economic fabric of our country. To provide basic healthcare to all, accessibility and affordability need to be integrated in our basic health infrastructure.