

Rural Infrastructure

Aspects Discussed

- A. Educational and Health Infrastructure
- B. Housing and Sanitation
- C. Drinking Water Supply
- D. Rural Transport and Communication
- E. Rural Electrification

A. Educational and Health Infrastructure

I. Education

Education plays a major role in attainment of economic development. Education is a part of human resource. Existence of mere population is not of much significance in any country. Manpower will be resourceful only when the population gets better education and training. With the help of education and training, population will be enabled to acquire necessary knowledge, skill and capacity. Education facilitates development process by way of assisting the growth of human resource. In the absence of education, human being will be steeped in ignorance and blind beliefs.

Education helps in increasing productivity and production, in improving the general standard of living, in growth of investigative attitude, in human resource development, in development of knowledge about common problems and in fashioning the man for society.

Education was not given importance in India during the British regime. Although English system of education prevailed

and a large number of Indians obtained higher education then, education was not widely propagated and it did not succeed in the attainment of its basic aim. Education system of that time crafted by Macaulay had the objective of preparing Indians as clerks, i.e., as assistants for trade and commerce. Britishers nurtured the aim of utilizing the education sector for their advantage and for expansion of their empire.

In the post-independence period, Government of India and governments of States have been striving hard for progress of education. During five-year plans the Government has made strong efforts to raise the rate of literacy through various programmes. With the purposes of spreading education and specifying its goal, 'National Education Policy' was adopted in 1986 and 1992. The objectives of this policy were to expand the opportunities for education, improving the quality of education, providing education which serves as supplement to peoples lives and implementing an education system which may assist in promoting moral and social values.

During the five-year plans, huge amount of expenditure has been incurred and various programmes have been implemented for development of education.

But the amount of expenditure on education in total expenditure has been very less in each five year plan. It was as high as 7 percent in the First plan and only 4.6 percent in the Tenth plan.

Although the expenditure incurred on education was not substantial, many programmes were undertaken for its propagation. As a result, literacy rate which was just 16.7 percent in 1951 has risen to 75.06 percent as per the census of 2011.

Measures are taken to spread informal education along with formal education. In addition to adult education programme,

literacy campaign has been extensively implemented across the country. This programme enshrines the objective of providing minimum level of education to dropouts and adult illiterates. The State had 3,534 libraries in 2004-05.

Present Position

Education sector has expanded leaps and bounds. Between 1951 and 2021, the number of primary schools has increased from two lakhs to about eight lakhs, of middle schools and high schools from 20,000 to 2.5 lakhs, and of colleges from 600 and to 18,064. In the same period, the number of students admitted to primary schools has gone up from 2.23 crores to about 16 crores, of high school students from 30 lakhs to about four crores, and of college students from three lakhs to about 90 lakhs. As a result of wide-ranging educational facilities, literacy has risen from 17 percent in 1951 to 74 percent in 2011. The number of universities has gone up from 27 to about 800. It has been the policy of the government to impart compulsory and free education to all children in the age group of 6-14. Priority has been accorded to adult education too.

Problems in Rural Education

Rural education in India is threatened by a very large number of problems. The following is a brief description of major problems haunting the educational sector in the countryside.

- 1. Deficiency of Resource Allocation :** Deficiency of allocation of financial resources has been a major problem pertaining to education sector, particularly rural education. Less than one percent of the total gross domestic product is allocated to primary and secondary education. Primary and rural education ha almost remained to be a neglected area.

- 2. Lack of Basic Facilities :** Scarcity of buildings,

existence of dilapidated buildings, deficiency of furniture, lack of drinking water and sanitation facilities are some other major problems. Existence of these problems has resulted in unavailability of better environment of learning for students.

3. Apathy on the part of Teachers : Teachers by and large exhibit a strong apathy to work in rural parts. They hesitate to work in remote regions and in areas known for torrential rainfall. Although they are posted to such places, they usually take transfer within a span of months.

4. Deficiency of Transport Facilities : Lack of effective transport facilities for students to traverse to schools and back home is another major problem. In remote regions and backward areas, schools are located at far off places from residential areas. Traversing by foot in rainy seasons is an arduous task.

5. Dropping out in the Middle : Students' drop outs, i.e., dropping out in the middle of the course, is a serious problem in primary education, particularly in rural education in countries like India. Students usually give up education at different stages such as fourth standard, fifth standard, seventh standard, etc., owing to various problems. Latest estimates reveal that in rural areas about 48 percent of the students drop out after completing the seventh standard. Rural education system has largely met with failure in motivating students for higher education and in providing a forum for it.

6. Competition from the Private Sector : The policy that private sector too is to be encouraged for the purpose of providing better education, has given rise to severe competition. A large number of instances may be found where government schools are shut as private schools attract students in the guise of providing best education. In other words, uncommon and

unethical competition has been another problem in rural education.

II. Health

Health of any nation is an essential factor for its development. Health of people of the nation determines the health of the nation. Provision of minimum level of health care plays a determining role in development process.

Strong relationship prevails between ill health and poverty. Individuals with sickness for a very long period always tend to be in a state of poverty. People living in poverty find it very difficult to bring about improvement in their health. Ill health pushes even individuals enjoying financial stability to stress and strain of an uncommon nature. These factors amply indicate the significance of health care and medical services.

In the post-independence period in India, basic facilities at the level of primary, secondary and tertiary health care in public, voluntary and private sectors has expanded considerably. There has been remarkable increase also in recruitment of personnel of health services. With the purpose of producing skilled manpower, a large number of medical and para-medical institutions pertaining to Ayurveda, natural therapy, unani, siddha and homeopathy have been established.

Tremendous progress has been achieved in the fields of rise in life expectancy, reduction in the rate of infant mortality and maternal mortality, etc. Small and guineaworm diseases have been completely eliminated. Polio is expected to be brought under control in the near future.

In spite of these remarkable achievements, problems galore in health sector. Malnutrition has been affecting innumerable children. A large number of people have been dying due to many new types of diseases besides the existing diseases. Considerable

number of deaths are still occurring in cases related to pregnancy and birth of babies.

Robust health and hygiene facilities reflect economic progress of the nation. They are of considerable help in overcoming diseases, increasing life expectancy of people and rising efficiency of labour. Availability of health facilities and progress achieved in the health sector would be gauged mainly from the existence of hospitals and availability of doctors and para medical staff to a specific number of population. In 1946, there used to be one doctor for 6,300 persons and one nurse to serve 43,000 persons. In 2021, it was one doctor to serve 2,600 persons and one nurse for 4,200 persons. In the same period, the number of hospital beds has risen from 24 to 100 per one lakh population. Many pestering and deadly diseases have been effectively brought under control. Life expectancy has gone up from 32 years in 1951 to 68.5 years in 2021.

Problems

Rural health sector has been pestered by many serious and formidable problems. Prominent of such problems may be enumerated as follows.

1. Severe deficiency of doctors is haunting the rural areas. Although doctors are recruited and given placement, a vast majority among them do not show inclination to work in rural parts.
2. Rural areas suffer from acute deficiency of health infrastructure.
3. Medicines and drugs supplied to rural areas are also of lesser quantity.
4. Expenditure incurred on public health in developing countries has been less than one percent of their gross domestic product. It is on an average about 1.3 percent

in India. However, it was just 1.03 percent during the Eleventh five-year plan.

5. A vast majority of people nurture a strong feeling that about 80 percent of the diseases that exist in rural areas are prevalent only in a certain specific areas and in particular type, and there is no need on the part of government to incur wasteful expenditure to give treatment for such diseases.
6. The percentage of people securing public health care has been very less in many developing countries including India. In other words, poorer sections of people have to inevitably depend upon private sector health services on a large scale.
7. In spite of expanding health sector, out of pocket expenditure constitutes about 70 percent on an average. That is, people have to spend about 70 percent on medical expenses on their own.
8. Insurance coverage is lesser on the whole. Patients are forced to incur heavy expenditure on outpatient treatment and surgeries.

The norm stipulates that there should be 2,600 expert physicians in districts, talukas and community health centres of the State. But even half of that number of expert doctors is not available at present. More than 4,500 hospitals have been experiencing deficiency of general physicians. Deficiency of surgeons, nurses and paramedical staff is very high.

According to the National Health Survey, there are more than eighteen lakh doctors in India. However, their service is not properly available to rural people. According to the norm stipulated by the World Health Organisation, there should be one doctor for every 1,000 population. But the country has one government doctor for every 14,000 persons.

As per prescription, there should be one primary health centre for every 30,000 people. But it is not followed in many districts.

Vision of the Eleventh plan

1. Primary Health Care

In the Eleventh five-year plan, much importance was attached to reconstruct and reorganize all health facilities below the district level. By doing so, efforts were made to strengthen the three-tier primary health care system. These hospitals are required to function at specified places, with mutual connection.

Hospitals and health centres are situated at a very distant place from habitats and this has led to failure of accessibility to people on time. This has remained to be a very big problem in the health sector even to this day. The Eleventh plan paid much attention for removal of this problem. Since habitats are scattered and are situated in hilly terrains, incidents of patients breathing their last while half way to hospitals at far off places are plenty. Importance of appropriate policy measure towards removal of this problem has been stressed. Similarly, the importance of making available the assistance of skilled midwives to pregnant women at the time of delivery has been rightly understood. Efforts have been made to provide connectivity of all-weather roads to primary health centres and community health centres.

2. Secondary and Tertiary Health Care

Special attention was paid to secondary and tertiary health care. Towards this end, more amount of responsibility was fixed upon public and private sectors during the Eleventh five-year plan. It was proposed to professionalise the administration pertaining to hospitals of secondary and tertiary treatment. And professionals with proper training were appointed as medical superintendents. Hospitals were allowed to appoint personnel of different grades including junior doctors on temporary basis.

3. Access to Essential Drugs and Medicines

Timely availability of drugs and medicines plays an uncommon role in the improvement of health services. Households incur a substantial amount of expenditure on these items. Poorer sections of people undergo unbearable difficulty if they are not available at the proper time and if their price is too high. But only ten percent of the amount in the total expenditure on health services by central and State governments has been set apart for drugs and medicines. Measures have been taken to raise this amount.

Purchasing and timely provision of quality drugs and medicines is an integral part of better health services. Measures have been taken to buy them in accordance with centralized rate agreement and to accomplish decentralized distribution.

B. Housing and Sanitation

1. Housing

Housing is one of the basic necessities of human being. Housing provides shelter to man's life. Further, it gives economic stability to each individual and enhances his social status. Man will be deprived of the opportunity of joining the social mainstream in the absence of own housing facilities.

There exists direct relationship between the state of housing and poverty. Utterly poor persons may not be having own houses. Even if they have, it may not be in a good condition. Millions of people in the country live in huts and dilapidated houses.

Factors Related to Housing Problem in India

Housing constitutes a major challenge to India's socio-political and economic system. The country at present is on the threshold of self-sufficiency in the food front, and clothing which

is another basic necessity does not remain to be a serious problem even for the poorer sections. But lakhs of people are devoid of housing facilities and it is a matter of serious concern.

Many people are of the opinion that lack of housing facilities is a problem limited only to towns and cities. In towns and cities, this problem is aggravated due to high density of population. In rural parts too, houselessness, scarcity of housing facilities and other problems related to housing have the same severity as in the urban areas. With the aim of removal of rural housing problem, both the Central government and the State governments have executed a number of programmes in the post-independence period. Nevertheless, this problem has been avoiding a full-fledged remedy.

Important factors relating to rural housing in India may be described as here under.

1. Housing Shortage : Many villages in India face severe shortage of housing. It is estimated that at present there is scarcity of sixteen million housing units in the country. In the backdrop of present rate of population growth in the country, about twelve million additional houses are required every year. However, construction of new housing facilities is not taking place at this rate.

Thus, houselessness or a state of not having any type of housing facility and living in dilapidated houses, are the major problems concerning housing scarcity in India.

2. Scarcity of Suitable House Sites : Scarcity of suitable house sites is another important problem in the area of rural housing. Eventhough huge extent of land seems to be available in rural areas, it includes many types of land such as meadow, gramthana, forest area, agricultural land, etc. Conversion of these

lands for housing is a difficult task. Similarly, development of sites in the land which is laden with rocks and mud dunes is not an easy task. With over population in rural areas, scarcity of house sites assumes serious proportions.

3. Lack of Sanitation : Other major problems related to rural housing are lack of sanitation, scarcity of drainage system, absence of air and light, and so on. The problem of flow or storing of unhygienic and garbage water on the road or in the very side of houses, due to lack of proper drainage or underground drainage system is most common. This leads to unhygienic conditions and spread of diseases.

4. Scarcity of Financial Facilities : Poverty is an important problem afflicting rural people. Incomes of rural people, after meeting the necessities of livelihood and clothing, will be usually spent for religious ceremonies like marriages and festivals. Since sufficient income does not remain for house construction, they will be neglectful of it and they will have a tendency of not attaching priority to dwelling facilities.

Further, there is scarcity of credit facilities for house construction in rural areas. Since house is not considered to be an income earning asset, financial institutions do not consider extension of credit facilities to rural housing as a priority. Lack of land or other assets to provide as security to avail credit has compounded the problem.

At present, credit facilities to rural areas from housing financial institutions are very low. Supply of institutional finance for rural housing and other facilities is a completely neglected sector.

5. Absence of Interest in Group Housing : To overcome the problem of scarcity of house sites and make the houseless

persons of a village reside in a common place, the system of group housing has been developed. In this system, many houses are built in a group in a certain place which is suitable for construction of a number of houses. These places will be naturally at a distance from the village limits. Generally, this system of building such houses has been developed in connection with Janatha housing scheme, Indira Awaas Yojane, etc. However, rural people lack a tendency to move to distant places or to live in group houses. This seems to be one of the prominent reasons for continuation of the problem of rural housing inspite of the government constructing lakhs of dwelling units every year at a cost of crores of rupees, under various schemes.

2. Sanitation

The concept of sanitation indicates a very broad connotation. It brings into fore disposal of liquid and solid waste materials; food hygiene; and individual, household and environmental sanitation.

Rural sanitation attracted the attention of the Government of India in the context of World Water Decade 1980. Central Rural Sanitation Programme was started in 1986 with the purpose of providing sanitation facilities in rural areas. This was a supply-oriented programme involving very high amount of subsidy and basic facilities. However, this programme failed to register anticipated progress as a result of drawbacks and deficiency of finances.

In this background, total sanitation campaign was implemented in 1999.

Sanitation is the most required factor for maintenance of good health, rise in efficiency of labour and for higher life

Rural Economy
expectancy. Towards this end, both rural sanitation and urban sanitation have been given emphasis in India since the beginning.

C. Drinking Water Supply

Drinking water supply plays a major role in economic progress by bringing about improvement in the standard of living of people.

In its programmes spanning over many years, central government has achieved considerable progress in fulfilling the needs of people relating to drinking water. Expenditure of about 58,000 crore rupees has been incurred so far for supply of rural drinking water. Drinking water facilities have been provided fully to 88.01 percent of families and partial drinking water facilities to 10.71 percent of families.

Intention of the Rural Development Ministry was to provide safe drinking water to all rural parts in the country by the end of 2004. Many programmes have been implemented towards fulfillment of this aim. The most important among them are :

- i) Accelerated rural water supply programme, and
- ii) National rural drinking water programme.

These programmes have laid emphasis on rain water harvesting, attainment of stability in the sources of water and community participation.

Rural water supply is a subject pertaining to state governments. From the point of view of supply of safe drinking water, state governments have been implementing many projects and works from their own resources. Even then, Government of India which has rightly understood the importance of safe drinking water in rural habitats has been providing grants to state governments for implementation of these schemes.

According to the 73rd amendment brought to the Constitution of India, rural water supply is a subject entrusted to Panchayat raj institutions. These institutions have to play a major role to provide safe drinking water, to maintain this system and to develop the sources in their area of operation.

1. Accelerated Rural Drinking Water Supply Programme

Accelerated rural drinking water supply programme was started in 1972-73. This programme has been brought into force to provide assistance to states and union territories with 100 percent grant-in-aid for implementation of drinking water supply schemes in problematic villages.

A design of publicity campaign was given to this entire programme by way of establishment of a Board called "National Drinking Water Mission". This mission was renamed as "Rajiv Gandhi National Drinking Water Mission" in 1991. Department of Drinking Water and Sanitation came into existence in August 2011.

The following are the major aspects contained in the Accelerated Rural Drinking Water Programme.

1. In this programme, resources are given to state governments to provide safe drinking water to rural habitations. State governments too have to release resources of their own and make a match with the resources of the central government.
2. State governments may utilize 25 percent of the total resources for works related to improvement of water quality. Out of this 25 percent, 20 percent of the amount may be utilized to achieve stability in the sources of water.
3. Out of the annual expenditure under this programme,

20 percent may be spent for implementation of sector reform projects.

4. Fifteen percent of the funds may be spent on maintenance and repairs of the existing systems and sources.
5. In states included in desert development programme, there is scope for spending five percent of annual allocation of money.
6. This programme may be implemented by Rural Development Department, Panchayat raj Department or Public Health and Engineering Department. The state government has to decide by which department it has to be implemented.

2. National Rural Drinking Water Programme

National Rural Drinking water programme is being implemented across the country in all the areas having rural inhabitation. This programme is implemented by the central government through financial and technical assistance to states and union territories. "Safe drinking water, at all times, in rural India". Is the slogan of this programme.

Objectives :

The following are the objectives of this programme.

1. Supply of safe and sufficient drinking water to rural areas in the country which are uncovered till this time, partially covered and affected in quality.
2. Getting assured the accessibility of all schools and anganwadis to protected drinking water.
3. Enabling gram panchayats and school development committees to plan, manage, operationalise and maintain local sources of water supply.

4. Supporting panchayat raj institutions and local committees to achieve this purpose.
5. Making rural communities to have surveillance over sources of their drinking water supply.
6. Development of management of participatory overall water resources.
7. Providing added priority to supply of drinking water to habitations of people belonging to scheduled castes, scheduled tribes and minority communities.
8. Development of low-cost technology for purification of water.

Major changes

This programme is different from Accelerated Rural water supply programme in many ways.

1. This involves principles as regards development of own water sources and monitoring and surveillance over quality of water.
2. Granting freedom to states to prescribe their own service standards, and to utilize according to priority the funds pertaining to national rural drinking water programme.
3. Payment of incentive of 10 percent and granting of funds to the extent of five percent to state governments to decentralize the jobs relating to operationalisation and management to panchayat raj institutions.

D. Rural transport and Communication

Introduction

The term infrastructure implies activities providing basic services to the economy. A large number of infrastructural

facilities are required for development of an economy. Economic development may be attained only when infrastructural facilities are expanded and when they are available without deficiency. To put it in other words, infrastructure of the economy are those activities which assist in overall development of the nation by way of provision of appropriate services to agriculture and industry which are basic sectors of the economy.

I. Transportation

Transport system in Karnataka consists of road transport, railways, water transport and civil aviation.

Significance of transportation is very high in India which is agriculturally dominant and which has attained sufficient progress in the industrial sector.

Importance of Rural Transport System

In any economy, particularly in a developing country like India, transport system plays a dominant role in development of the nation.

1. Transportation of commodities necessary for production : Transportation makes a remarkable contribution to economic development by assisting conveyance of raw materials, machines and equipments necessary for production to production centers. Medium of transport is essentially needed to convey agricultural inputs from towns to farming centres, agricultural products from agricultural centres to markets, and industrial inputs from different places to industrial centres and industrial products from production centres to different places and sectors.

2. Benefits of backward and forward linkages : Growth of transportation provides the benefits of backward and forward linkages. Its advancement induces industrialisation and thereby assists in employment creation and increase in production of

machineries and spare parts. Similarly, transport system contributes to economic development, modernisation and growth of civilization by helping to connect different places and in conveyance of people and goods. Banking, commerce and trade activities grow and urbanisation takes place rapidly with expansion of transport facilities.

3. Stimulus to labour mobility : Transport system plays a crucial role in the process of development by way of causing inducement to labour mobility. Production is hindered in some places owing to deficiency of supply of labour, whereas in some other places excess labour supply acts as an obstacle to economic development by creating severe unemployment situation. Mobility of labour is usually low due to various factors like traditional beliefs, dogmas and ignorance among people; language diversities, caste system; differences in customs and food habits, etc. And deficiency of transport facilities aggravates labour immobility. Transport services help considerably in increasing supply of labour to deficit areas, in introducing the people to the external world and in removal of their ignorance.

4. Achievement of price stability : Food materials and industrial products need to be transferred from surplus areas to deficit places. Similarly, food articles as well as house construction materials are to be quickly transported to places where people are in distress and crops are lost due to natural calamities like floods, droughts, famines, etc. Only an organised transport system can undertake this task. Transport system has a very large contribution to make for attainment of price stability by way of transporting goods and commodities from surplus areas to deficit areas and thereby assisting in removal of unequal distribution of these materials.

5. Employment creation : Transportation plays a leading role in creation of jobs. Manufacturing of machineries and spare

parts needed for construction of different types of vehicles relating to road transport, railways, ships and aeroplanes create very large number of jobs. Similarly, construction of roads and railways, driving of vehicles and jobs related to packaging and transportation of goods provide millions of employment opportunities.

6. Extension of market : Transport system induces extension of market by way of assisting in transporting goods and commodities from one place to the other and from one sector to the other. This factor naturally provides scope for large scale production and division of labour.

7. Stimulus to geographical discovery : Growth of transportation stimulates geographical discoveries. In spite of having abundant natural resources, many remote and hilly areas remain in backwardness since ages because of deficiency of transport and communications. Medium of transport helps in discovery of many types of latent and hidden resources in such areas. It stimulates the process of economic development by way of influencing utilisation of many resources which are not yet employed in production.

8. Assistance for maintenance of law and order : Transport system gives a great helping hand to overcome internal disturbances and to maintain law and order. The system is most essential to convey police force, border security force, army and other forces to the places inflicted with unrest, skirmishes and warlike situations, and thereby to maintain peace.

Present Position

Progress attained in the transport sector mirrors the overall development of the Indian economy. Length of roads has increased from a mere four lakh kilometers to 35 lakh kilometers between 1950-51 and 2020-21. All types of road facilities were

provided to about 80 percent of the villages in the country by 2006. Efforts have been undertaken to link almost all villages with the nearest town through one or the other mode of transport. Railway network of 53,000 kilometres in 1950-51 has risen to 74,000 kilometres in 2020-21. Much of this is electrified. Gross tonnage of shipping has increased from 1.9 lakh tonnes in 1951 to 120 lakh tones in 2021.

Problems

1. Existence of low quality roads : A large part of the roads in India are of very low quality. About 65 percent of the roads are not surfaced roads and they lack efficiency for transportation. During rainy seasons, traffic and conveyance through these roads is hazardous. It is really awesome as regards bullock carts.

2. High cost of transportation : Cost of transportation is very high due to existence of low quality roads and many types of taxes. Estimates by the Keskar Committee in 1967 revealed that loss incurred per year due to low quality roads amounted to about Rs. 150 crore. This may be still higher in the present day situation. Keskar Committee was of the opinion that transport cost could be reduced by half if quality of roads is raised. Further, road transport has to bear the burden of many taxes. It is obliged to pay motor vehicles tax, registration fee, import duty, sales tax, taxes on spare parts, taxes and cess on crude oil etc. This has caused undue increase in managerial cost of road transport.

3. Restrictions imposed by the government : Motor transport is subjected to various types of unnecessary restrictions. Every state has its own restrictive measures. The code of principles and practices adopted in accordance with Motor Vehicles Act has come in the way of saving of time and money as regards motor traffic.

4. Severe competition among owners : India has a large number of vehicle operators. Majority of them own less number of vehicles each. Massani Committee had estimated that there were more than 48,000 vehicle operators in the country, and about 46,000 of them own less than five vehicles each. Severe competition among them has led to reduction in transport efficiency and quality of service. Implementation of regulatory measures is also difficult owing to operation of large number of owners. This has proved to be a severe impediment for progress of road transport.

5. Fear of nationalisation : Fear of nationalisation has come in the way of growth of road transport. About 75 per cent of passengers traffic and the entire goods conveyance is handled by private vehicle operators. Private vehicle operators are under the threat that the government may invoke its nationalisation measure at any time and may confiscate their vehicles. Increase in the number of vehicles and better quality of service are affected because of this fear.

Remedial Measures

Prominent measures that may be suggested for improvement of road transport are as follows.

1. Construction and repairs of roads : More attention needs to be given for construction of new roads, expansion of road network and repairing works. Construction of metalled roads and all-weather roads should receive priority. Expenditure of a large scale is required for this purpose.

2. Lowering of transport cost : Reduction of different types of taxes and duties which are responsible for very high transport cost is essential from the point of view of development of road transport. Through this measure, cost may be reduced by half and transport efficiency may be enhanced.

3. Relaxation of administrative restrictions : Rescinding of different administrative measures which act as restrictions to growth of road transport is the emergent need. Relaxation is needed in the procedures adopted for giving licences and delay caused to movement of vehicles at inspecting centres should be avoided. Collection of various types of duties has to be given up.

4. Building of modernised carts : Bullock carts still hold the sway in Indian economy which is full of villages and having agriculture as primary occupation. In India's present economic environment, giving up transportation through bullock carts is not so easy and not possible at all. Therefore, much emphasis should be given to construction of rural roads and building of modernised carts. Manufacturing carts having wheels made of rubber and soft yokes which do not cause pain to shoulders and neck of oxen is equally important. Road network has to be increased so as to make all villages without any exception to be linked with main roads and market centres. These things can bring significant revolution in the field of rural transport.

II. Rural Communications System

Communication system encompasses a large number of services such as mail, telephone, telegraph, radio, television, fax, pager, mobile, internet and so on. These are the media for dissemination of news and providing information.

1. Postal System

Postal system is an infrastructure facility available for conveyance of message. Modern type of postal system was heralded in India in 1837. Postal network came to be expanded across the country after 1950-51. Recent years are witness to growth of postal services even in rural and hilly regions. The number of post offices that exist in India at present is about

1.80 lakh. Indian postal system is the largest in the world. On an average, one post office is in existence for every 5,000 people in India. Annual income the postal department earns is about 2400 crore rupees.

In postal service, post cards, inland letters and covers are the prominent means for remittance of message. Registered post is another important means for sending letters and documents. Things and letters may be sent by parcel. Money remittance through 'money order' has been very popular. Postal Index Code (Pin Code) has been adopted in the postal system in 1972. This is a scientifically devised system consisting of six numbers which facilitates separation of letters on the basis of region, district, area, ward, etc. Quick mail service has been brought into operation in 1975. It connects capital cities of state with major commercial centres and other cities. 'Speed post service' was brought into operation in 1986 which is a major breakthrough in sending specific letters and things from one place to the other for faster delivery.

Accepted policy of the government is to establish a post office within a jurisdiction of three kilometres in each village and to install a letter box facility in every village having population above 500.

2. Telecommunications

Telecommunication involves modern communication media. Telephone, telegram, telex, radio, television and fax are the major media in the telecommunications network. These services have a formidable contribution in quick growth of communications system.

On the eve of independence India had only 321 telephone exchanges and 82,000 connections. Telephony has grown leaps and bounds during the five year plans. In 1997, there were 20,500

telephone exchanges and 13 million connections. About two million new telephone connections are given every year.

Standard Trunk Dialling (STD) facility was brought into operation in 1960. This service offers the facility of having telephonic conversation among persons from any part of the country with any other part instantaneously. STD facility has provided an unprecedented service for development of trade and commerce. International Standard Dialling (ISD) is the facility in existence for international telephonic services.

Telegraphs system is one of the oldest communication media in India. The number of telegraph offices has increased from 8,200 in 1951 to about 30,000 in 1997. Phonogram service to receive and send telegrams through telephone, and telex service to directly send printed message from one centre to the other, registered rapid expansion.

Telegram or telegraphic service stands abrogated at present.

Radio and television are the major media of communications network. There were only six radio stations in the country in 1947 which rose to about 150 in 1995. Telecast as a service was introduced in 1959. Television has about 600 centres and is reaching about 95 percent of the people at present.

All India Radio (AIR)

Dr. M.V. Gopalaswamy who served as professor of psychology started a radio relay centre called 'Akashvani' in 1935. The state government took over this centre in January 1941. Later on, central government took over this centre and transferred it to Bangalore in November 1955. In the same year, Bangalore All India Radio station started relay services through high powered dissemination equipment. In North Karnataka part, the first relay centre started functioning at Dharwad on 8 November 1950. This assisted considerably in expansion of

cultural sphere in Northern Karnataka.

Subsidiary stations were set up at Bhadravathi in 1965 and in 1966 at Kalaburagi. Mangalore station was started in 1976.

After 1990, All India Radio started operations at seven places. They are : Chitradurga and Hassan in 1991, Hospete in 1992, Madikeri and Raichur in 1993, Karwar in 1994 and Bijapur (Vijayapura) in 1997. As a result, total number of stations in the state rose from 6 to 13.

About 96 percent of the people in the state have been getting radio services. A system of relaying at different frequencies is made in these stations.

'Prasar Bharathi' was added in 1997. Fourteen All India Radio Stations (centres) are in existence in the state at present.

5. Televisions

The first television centre in the state was established at Kalaburagi. It was inaugurated on September 3, 1977. Initially, people of only 240 villages of the districts of Raichur, Kalaburagi and Vijayapura got the benefit of collectively viewing the programmes relayed by this centre. Collective observational televisions were managed by television centre of Kalaburagi. Temporary television relay centre was made available at Bangalore in 1981.

Television programmes in Kannada were started in March 1, 1990. In 1992, Shivamogga centre got communication machine of 10 kilowatts. In 1993, there were 27 television communication machines in the state. This rose to 46 in 1998.

Apart from television satellite stations, private television centres such as udaya, Ushe, Cauvery, Udaya news, Suprabhatha, ETV, Kasturi, Zee etc. have been providing

television facilities. Added to this, many satellite stations relaying programmes relating to languages such as Tamil, Telugu, Hindi and Malayalam are also operating in the State. Television has been providing very wide services at present. It has extended even to very remote and rural areas.

E. Rural Electrification

Perhaps there arises no necessity to stress the role of electricity in the process of economic development of any country. We have reached a stage in the modern age where we cannot take any activity in any sector of the economy forward without the assistance of electricity. To put it in another way, the process of economic growth and the entire life have been embedded with utilisation of electricity. Anyone can easily understand the significance of electricity when he knows the fact that scarcity and untimely supply of electricity results in loss of output and hindered process of production.

Importance

Electricity plays a crucial role in economic development of any nation. The modern age is aptly described as the age of energy and electricity. Attainment of development is an impossible task without electricity and energy. Importance of electricity in economic development may be understood with the help of the following factors.

1. Agricultural development : Electricity plays a dominant role in agricultural development. Artificial irrigation depends mainly on irrigation. Electricity is essential to irrigate lands through pumpsets from tube wells and also in lift irrigation. Indian agriculture is at cross roads and huge extent of crop loss is taking place due to deficiency of electricity and its untimely supply.

2. Domestic use : Electricity is widely used for home lighting, cooking, heating water and other purposes. Use of electricity for these purposes saves a lot of time. Electricity is essential also for street lighting. We are living in a world where life will be in darkness without electricity.

3. Industrial development : Industries of any kind, agro-based, small-scale, medium-scale, large-scale, rice mills, etc., cannot run without electricity. A large number of industries in India are incurring huge losses not being able to produce upto the installed capacity. This is a strong reason for low output and prevalence of unemployment. Electricity is the crucial determinant of economic development through industrial growth.

4. Expansion of employment opportunities : Growth of electricity sector leads to more jobs. Construction of power plants, generation of electricity, its supply and distribution, and so on have the potentiality to create several employment opportunities.

5. Development indicator : Electricity is a major indicator of economic development. A country with large scale generation of electricity and its timely and adequate supply to all sectors of the economy is considered to be in the forefront of development process. Scarcity of power is an indicator of underdevelopment.

Electricity is a crucial factor for socio-economic transformation of rural areas. It performs functions both as an infrastructural facility and as an input. Rural electrification has made rapid strides in India in the last five decades.

Of the 5.87 lakh villages in India, 5,07,451 villages had already been electrified by 2016. It was stated that all villages except a few hamlets have been electrified by 2021. In contrast, only 21,700 villages had been electrified in 1961. Rural electrification has been a prioritized programme, and

government has a clear and unwavering policy stance in this regard since the beginning.

Rural electrification involves lighting at homes, supply of electricity for street lighting, and energizing pumpsets to lift water for irrigation. A village is considered to be electrified when electricity is available for all purposes to the people residing in the revenue jurisdiction of that village.

Rural electrification results in new spirit among ruralites, agricultural output is elevated and uncertainty in farming comes down. Rural electrification goes miles and miles in reducing socio-economic disparities between urban areas and rural parts.

There has been about thirty two fold increase in the number of villages electrified in India between 1961 and 2016. This is by all means a marvellous achievement. Comparatively more progress has been achieved in energizing irrigation pumpsets. The number of irrigation pump sets energised till March 2022 had been about 142 million.

In rural electrification, priority is attached to hamlets which are not in revenue records, remote villages and Janatha colonies.

By 2016, 100 percent rural electrification was achieved in the nine states of Andhra Pradesh, Goa, Haryana, Kerala, Punjab, Tamilnadu, Maharashtra, Gujarat and Sikkim. The number of yet to be electrified villages in 2016 had been 23,765 in Uttar Pradesh, 19,651 in Bihar, 11,864 in Odisha and 5,666 in Assam. More number of villages which were not electrified was in these four states.

Rural Electrification Corporation

Rural Electrification Corporation has been a major public organization engaged in the supply of energy to rural areas. The corporation was established in 1969. The idea behind establishment of this corporation was to make electricity available to rural regions with the objectives of rapid economic

growth and improvement in the standard of living of rural people.

Rural Electrification Corporation was set up with the purposes of promoting the projects related to generation, conservation, dissemination and distribution network and to provide financial assistance to them. In these matters, it functions in a competitive, customer-friendly and development oriented manner.

With the establishment of Rural Electrification Corporation, an independent institution did emerge which could look after requirement of electricity for the rural sector, implementation of measures for its supply and production of electricity. It had been a significant step in rural reconstruction.

Substantial amount of capital is being invested in India in rural electrification since 2005. According to official estimates, 100 percent rural electrification has been accomplished and about 90 percent of household residences have been provided electricity connectivity. Efforts must be concentrated to attain affordability, efficiency and quality in supply if investment of capital at this massive scale is to be rewarded in terms of rural development dividend. Importantly, the needs of small customers have to be kept in mind. The emergent need is to attach importance to provide universal connectivity, to Jack up supply and to enhance the quality of services.

Rural Electrification Act

Rural Electrification Act was brought into force in 1954. The objectives of this Act were to pursue measures to attain rapid progress in rural electrification and to find appropriate ways for redressal of customer grievances.

Different Schemes

The following are the major schemes adopted in the area of rural electrification in recent decades.

1. Remote Village Electrification Programme

The objective of this scheme is to accomplish electrification of all villages in remote regions by means of unconventional sources of energy such as solar energy, tiny hydro electricity, gobargas, and wind power. This scheme enshrines the provision of supply of electricity facility to remote census villages and hamlets attached to census villages already electrified. The programme aims at providing benefits of energy to the people living in very backward regions of the country and who are devoid of privileges.

The scope of this programme is as follows.

- i) Electrifying all hitherto not electrified and remote census villages before 2007.
- ii) Electrifying all hamlets (small villages) attached to electrified census villages by the year 2012.
- iii) Providing electricity facility to families of villages attached to census villages and hamlets by 2012.
- iv) Providing electricity facility by the end of the Eleventh five-year plan (2012) to all remote villages and hamlets which are not electrified through conventional sources.

2. Rajiv Gandhi Rural Vidyuthikaran Yojana

This scheme was brought into force in April 2005 by clubbing together various schemes that were in existence.

Under this programme, central government gives ninety percent of the amount in the form of grants and ten percent in the form of loans to state governments. Rural Electrification Corporation functions as supervisory organization in the implementation of this scheme.

The following have been the objectives of Rajiv Gandhi Rural Vidyathikuvana Yojana.

- i) Electrifying all villages and residences as per the new definition.
- ii) Providing accessibility to electricity to all rural families.
- iii) Providing free of cost electricity connectivity to below poverty line families.
- iv) Providing distribution transformers and distribution lines to residential areas and dalit colonies.
- v) Providing electricity connectivity to schools, Panchayat offices, health centres, community centres and the like.

3. Rajiv Gandhi Gramin Vitrak

This scheme was started on October 16, 2009. Major aim of this scheme has been to increase energy connectivity to rural areas and regions of lesser capacity.

4. National Biogas and Manure Management Programme : The objective of this programme is to manage cowdung for increase in fertility along with rising the production and utilization of biogas.

Rural electrification programme has been conducted with fervour and fierceness. Residential houses brought under electricity connectivity have been about seven lakhs every year. To accomplish this job, the personnel of the Corporation have been putting in overtime work.

Of the 3.56 crore residential houses which were not electrified, 2.1 crore houses have been brought under connectivity by the year 2016. According to the estimates done in 2016, of the 84 lakh houses not electrified, Uttar Pradesh had the major share of 56 lakh houses.

International Energy Agency was of the opinion that India's effort in electrifying each village is a great success story in the entire world. It held the view that such efforts elevate economic welfare of people.

Fifteen states in India had completed rural electrification in the beginning of 2018 itself. Other eight states were on the last stage of providing electricity connectivity in its entirety to all residential houses. A small number of villages were not electrified in Maharashtra, Uttar Khand, Himachal Pradesh, Arunachal Pradesh and Chattisghad.
