CHAPTER-I

Introduction

1.1 Role of Infrastructure in Promoting Economic Development

In today’s world it is difficult for an economy to aspire to be strong without a sound infrastructure. The role and imperativeness of infrastructure in spearheading economic development of an economy and also setting its pace can hardly be overemphasized. Like that of the foundation of an edifice, the place of infrastructure sector as well as of its soundness, are crucial to the soundness of economy’s overall development. The all-pervading importance of infrastructure sector would be clear from the fact that it encompasses the whole spectrum of vital services such as transportation (railways, roads and road transport, civil aviation, ports and shipping), power generation, distribution and transmission, telecommunications, postal facilities, health facilities, education, basic amenities of life etc. Since, infrastructure is a pre-requisite to economic development, its deficiency, ipso facto, explains the backwardness of the region.

In any modern society, infrastructure is considered as a pace setter of economic growth and one of the most important determinants of economic development. The very functioning of an economy is determined by the existence of infrastructural facilities. The importance of infrastructure for development was recognized early with the emergence of development economics (Rosentein-Rodan, 1943; Ragner Nurske, 1952; Hirschman, 1958; Rostow, 1960; Myrdal, 1968). Availability of adequate, efficient and affordable infrastructural facilities, both economic and social, constitutes the core of development strategy and efforts. It may be truly said that the importance of infrastructure for economic development could hardly be ignored, as the superstructure
of a nation's overall wealth hinges on it (Ferrerira and Issler, 1995; Holtz-Eakin and Schwartz, 1995; Day and Zou, 1994; Easterly, 1993). Infrastructure increases economic productivity, gains degree of specialization (Bougheas et al., 1999; Henderson, 1988), lowers production costs (Romer, 1987), improves quality of life, alleviates poverty, maintains environment sustainability (World Bank, 1994), raises international competitiveness, attracts foreign investment and helps in urbanizing the economy (Henderson, 2002), creating access to employment and providing further earning opportunities, creating access to previously inaccessible commodities and services, (India Rural Infrastructure Report, 2007), creates many direct and indirect externalities, and involves large flows of expenditure (Ghosh and De, 2004).

The World Bank (1994) observed that infrastructural development has a strong positive link with level of GDP and infrastructure stock per capita. According to the World Bank (Songco, 2002), “a one percent increase in the stock of infrastructure is associated with a one percent increase in GDP across all countries”.

Infrastructure stimulates economic development through its role in both demand and supply sides of the economy. On the demand side, it opens up the possibilities of investment by making availability of necessary inputs and services, opening up the size of the market and increasing the supply elasticity and efficiency of factors of production. On the other hand, supply side gives emphasis on development of infrastructure that helps in mobilizing potential saving and hence, translating them into productive investment (Demetriades and Mamuneas, 2000). A robust economy needs a robust infrastructure (Khader, 1998). Further infrastructure tends to exercise profound influence on other sectors of the economy including primary, secondary and tertiary sectors.
The relationship between infrastructure and economic development may be analyzed by focusing on its impact on the basic determinants of development particularly through its link with capital formation and technological change. Infrastructure is itself a component of the capital stock of a society; as such increase in it adds to the stock and, therefore, promotes development. The close link of factors, which determine the supply of capital with various items of infrastructure, is quite obvious especially in the case of financial institutions. They are necessary both for mobilizing savings and providing capital for agriculture and industrial development. The most significant contributions of infrastructure towards economic development are its impact on the availability and supply elasticity of factors of production, size of the market and the level of urbanization in the economy (Pradhan, 2005). They provide a facilitative set-up, which stimulates the development of an economy. Infrastructure installations do not directly produce goods and services but provide social overhead capital (SOC) for all economic activities. They raise the productivity of other factors, including labour and other capital. For this reason, infrastructure is often called “unpaid factors of production”, since their availability leads to higher returns obtainable from other factors of production (Pradhan, 2003).

There is a symbiotic relationship between infrastructure and economic development. They are both cause and effect. Rao (1983) has lucidly summarized this inter-relationship between infrastructure and factors of production in the following way, “The function of infrastructure is to release latent productivity in the factors of production singly and in coordination with others. This brings about not only an increase in the output of individual factors and units of production but also a mutually additive effect through co-ordination in inputs, outputs, and space and time. The process thus maximises the overall rate of economic growth”.
Provision of infrastructure plays a vital role in influencing the level and nature of economic and socio-cultural activities in a nation. It is sine qua non for the sustainable development of a region. Infrastructure facilities facilitate the working of an economy. **Mody** (1997) aptly suggests that in any modern society, infrastructure plays a pivotal role - often decisive role in determining the overall productivity and development of a country’s economy, as well as the quality of life of its citizens”. The services generated by infrastructure investment lead to the growth in the production of firms in following ways:

(i) Infrastructure services, such as transport water and electricity, are intermediate inputs to production and any reduction in these input costs raises the profitability of production thus permitting higher levels of output, income and/or employment;

(ii) Infrastructure services raise the productivity of other factors (labour and other capital) for example, by permitting the transition from manual to electrical machinery, reducing workers’ commuting time, and improving information flows through electronic data exchange. However, when the available infrastructure becomes congested or begins to create a predominantly negative impact on the environment, the quality of services declines and their contribution to productivity suffers.

Second, infrastructure contributes to raising the quality of life by:

1) Creating amenities in the physical environment.

2) Providing outputs which are valued in their own right.

3) The financial infrastructure has important implications for macroeconomic stability. As a counter cyclical tool, infrastructure investment can generate employment and consumer demand in the short term, as well as in the longer term when the investment is well chosen (**Christine Kessides**, 1993).
Straub (2008) distinguishes additional channel through which infrastructure investments may cause growth effect: economies of scale and scope. The author argues that better transport infrastructure lowers the costs of transportation and leads to economies of scale and better management.

The authors of recent literature estimate the effect of different infrastructure sectors on growth and their estimated results differ. For example, Aschauer (2000) finds that the stock of public infrastructure capital is a significant determinant of aggregate total factor productivity and that investments in public sector not only improve quality of life but also increase economic growth and returns for private investments. Calderón, Servén (2004) estimated that indicators of telecommunication and energy infrastructure have positive and significant effect on growth. Results of Seethepalli, Bramati, Veredas (2008) and others also prove that infrastructure is important for promoting growth. Li and Li (2008) argue that infrastructure investment is very important to boost national economic growth and prove this with the results of infrastructure investment and the GDP in China from 1997 to 2006.

Infrastructure plays an important role in creating a good investment climate for the private sector. Private investors are always attracted to areas with adequate infrastructure. Low-income countries will be able to stimulate private investments by developing not only physical facilities but also social infrastructure such as good governance and appropriate institutional development. Such fostering of a favourable environment will spur private investment, employment creation and productivity improvement, culminating in regional and national economic growth. Indeed, East Asian countries did exactly this and successfully attained economic growth and reduced absolute poverty.
1.1.1 Economic Infrastructure and Economic Development

Economic infrastructure provides basic facilities for the smooth conduct of general economic activities. These take the shape of physical capital formation and are sometimes called the hardcore of infrastructure. Out of whole range of economic infrastructure, two components, namely, transport and communication, and power stand out very prominently in terms of their importance in initiating and sustaining a desired rate of growth of an economy.

(i) Transport and communication

Since there is a natural tendency of people to move around, transportation is a classic case of network industry. It traditionally involves the movement of goods and people between various locations. More recently in the ‘Communications Age’ (Anderson et al., 1990), people have become more concerned with the movement of information between various points through different modes of transportation. Transport and communication have multi-dimensional role to play and they affect the economy in more than one way. These facilities help greatly in widening the size of the market and people’s access to it. Most of the development economists emphasize the role of transport and communication facilities in enlarging market and promoting people’s access to markets. Youngson (1967) states, “The more closely one examines the impact of transport improvement, the more clearly one realizes how pervasive this impact is, in what a multiple of ways the transport system helps to determine the scope and direction of economic development and how important are transport improvements in creating new opportunities and new incentives”.

The development of transport and communication network not only widens the market but also helps in breaking down regional isolation as well. Contrary to this, lack
of transport and communication facilities accentuates regional imbalances and keeps certain areas in perpetual poverty and deprivation (Myrdal, 1968). The extension and improvement of transport facilities generally results in reduction of transport cost per unit of freight haulage. All these cost and service dimensions of improved transport promote the optimal use of resources by facilitating productive activities and increasing the productivity of resources employed therein.

It is further emphasised that developed and efficient transport and communication network improves economic efficiency by increasing the mobility and elasticity of supply of labour and other factors of production. As Hagen (1975) rightly states, “…in so far as there is imperfect mobility, a recommendation for partial remedy is the improvement of transport, communication and information.” According to Mentolio and Solé-Ollé (2009) public investments in transport infrastructure (particularly – roads) positively affect productivity of a region. Zou, Zhang, Zhuang and Song (2008) analysed data from China and found that higher economic growth level comes to a greater extent from better transport infrastructure and that public investment on road construction in poor areas is crucial to growth and poverty alleviation.

Thus the growth of communication facilities is an integral element in the economic and technological advancement of an economy. Communications have a key role to play in the developmental process, programmes relating to developmental activities, particularly in agriculture and rural development, education, family planning, ecological balance and protection of environment, energy, management, etc. An efficient system of transport and communication facilities is a sine qua non for sustainable development of an economy. The agriculture and industrial sectors are
considered as the body and bones of the economy, while transport and communications are its nerves.

(ii) Power and Energy

Energy has been termed as the fuel of economic progress. It is the prime mover of economic growth and development. Throughout the history of human race, major advances in civilization have been accompanied by an increased consumption of energy. Those countries that have had abundant supply of energy available to them have realized substantially higher rates of industrial growth and corresponding increase in the Gross National Product (Raikhy & Singh, 1990).

Electricity, a major source of energy, is regarded as an important factor for bringing about radical changes in the socio-economic life of a community. Because of multifarious uses of electricity, such as for lightning and as a source of motive power, its introduction does not merely facilitate provision of better amenities but augments productive capacity in different sectors of the economy through its wide range of applications. The availability of electric power affects industries in two principal ways: firstly, the traditionally operated industries gradually change over to electric power, and secondly, new industrial units operated by power come up. Use of electric power, therefore, strengthens and expands both small and large industrial sectors and makes them more efficient and productive. Similarly, rural electrification has a significant and positive impact on agriculture production, thereby creating additional possible resources.

To sum up, economic overheads, i.e., roads, transport, communication and power have a significant role in promoting economic development by creating a base on which a higher level of economic activity can be carried out. It plays a key role in
our society and constitutes the wheels, if not the engine of development (Prakash, 2005).

1.1.2 Social Infrastructure and Economic Development

The concepts of social infrastructure is very broad and it acquires a very important role in developing economy as it performs the task of development of human resource through education, skill generation, training, awareness creation and health care and research and development to enhance efficiency of the production mechanism. Earlier economists like Adam Smith, Marshall etc. were also aware of the human resource development. It has been increasingly recognized that the growth of physical capital depends on considerable human capital formation. Lack of investment in human capital formation has been responsible for the low growth of underdeveloped countries.

The development of a nation is not only measured by the buildings it has built, the roads it has laid down, the bridges it has constructed and the like but also by the human resources that the nation has developed through a well defined system of education, health etc. Although the physical infrastructures are equally important, yet they are perishable and usable. In the absence of proper human resources, a nation can hardly develop these and maintain them (Tiwari, 2000).

The history of economic development of different developed countries of the world is a testimony of the fact that nations with rich human resources can ultimately gear the economy into the desired channels of growth.

(i) Education

Education acts as the catalyst for human resource development which encompasses better health, nutrition and improves socio-economic opportunities. It is
one of the most important social infrastructure variables which is having direct link with the level of income, productive manpower (i.e., human capital) and standard of living. Apart from providing qualified people, it exposes the masses to new ideas and creates right exposure for the masses to new ideas and also creates right attitude and climate which are a sine qua non for economic development (Myrdal, 1968). It is considered as fundamental to all round development of the individual both at material and spiritual levels. Education is intrinsically intertwined with the development process and constitutes the instrumentality of modernisation of tradition (Raza, 1990).

The role of education in economic development has been noted by the researchers (Sodhi, 1985 & Singh, 1974). At the micro level the direct and indirect role of education through value-orientation in economic development has already been established (Bhagat, 1989). Education is also vital to sustain competitive markets and viable democracy. Researchers have shown that increasing the average primary schooling of the labour force by one year can increase output substantially. Even at the macro level, social benefits of elementary education are immense. Educated parents send their children to school; elementary education leads to perpetuation of benefits from one generation to another (Sinha, 2004, P. 628).

The role of education as a social infrastructure and as a stimulant of growth and development can be experienced only if it is provided with quality. Qualitative education is a major determinant of the stock of human capital. A less developing economy needs professionals in all sectors to accelerate the growth and development of such sectors. In fact, UNESCO recommends a minimum of fifteen percent of national expenditures on education.
Education is the most crucial factor not only to equip the new generation with skills so essential for earning a livelihood but also to create among them an awareness to social and environmental realities, inculcate in them scientific temper, independence of mind and spirit as well, which are of paramount importance for them to become responsible citizens. Education is the substrata on which research and development depend. Education is an integral part of the development progress. The two cannot be separated. Any investment in education is, therefore, the best investment for the future of the civilizations. The education has several returns; it has intrinsic as well as instrumental importance which is essential for enhancing human capabilities.

(ii) **Health and medical services**

In terms of resources of economic development, health of the people is considered as a direct measure of a nation’s energy, capacity and efficiency to achieve a faster rate of growth.

Health, like education, is a very important factor in the socio-economic production function. A popular adage says that a sound mind usually resides in a healthy body. Good health is not only an achievement in life but also an enabling condition for enjoying better opportunities for development (Hirway and Mahadevia, 1996). Health is one of the major determinants of labour productivity and efficiency. Again, since health as a social good provides externalities, large-scale health facilities can only be provided with public resources. Public health deals with the environment in which economic activities take place. If that environment were conducive, it would be permissive of accelerated growth and development. “Public health measures include the improvement of environmental sanitation both in rural and urban areas, removal of stagnant and polluted water, slum clearance, better housing, clean water supply, better
sewage facilities, control of communicable diseases, provision of medical and health services especially in maternal and child welfare, health education, family planning and above all, for the training of health and medical personnel” (Jhingan, 1974). The general weak health, under-nutrition and wide spread prevalence of debilitating diseases like malaria, bilharzias etc. deplete the energy of the people in the underdeveloped countries and reduce their work efficiency (Joshi, 1990).

Thus, investment in social infrastructure like health and education constitutes the core of economies of human resources. It is the quality of the people in term of their physical and mental ability that ultimately determines the success of developmental policies. No planner can afford to be oblivious of the pivotal role played by human resources for the purpose of economic development. For sustainable development of a region although both economic infrastructure - transportation, communication, power and social infrastructure - health, education etc. are important; the development of economic infrastructure is basic as it not only provides the foundation of an economy but also accelerates the development of social infrastructure.

1.2 Statement of the Problem

Availability of adequate socio-economic infrastructure is a basic requirement which shapes the pace and direction of economic development of an economy. This is more so in the case of the economy of a hilly and far-flung region like Nagaland where the geo-climatic conditions and physical isolation pose serious challenges to economic development. Nagaland started the planned process of development much later than the rest of the country as it missed out the benefit of first three Five Year Plans. After a span of 48 years, Nagaland’s economy still confronts many developmental challenges. Foremost among them are relative isolation, the difficult terrain and inaccessibility to
the rest of the world, continued insurgency and inadequate infrastructural facilities. These handicap the State’s endeavours towards industrial and entrepreneurial development, private sector partnership in spearheading development initiatives and all-round regional planning.

Several regions within the state especially the rural areas have remained backward as they lacked, as the available literature suggests, adequate infrastructural facilities. The level of socio-economic development in the western regions of Nagaland is higher than in the eastern side. This is because contingency to Assam provides better connectivity while on Myanmar side accessibility still presents formidable problems. Remoteness and inaccessibility are also the predominant cause for regional disparities in the State. An index for Social and Economic Infrastructure by the Eleventh Finance Commission, during 1999, ranked Nagaland, with an index value of 76.14 as the seventh most remote State in the country. The state has identified Mon, Tuensang and Peren districts as well as Meluri subdivision in Phek, Bhandari in Wokha and Pughoboto in Zunheboto as its backward areas. These areas were ‘traditionally’ remote and inaccessible (State Human Development Report 2004).

Nagaland’s remoteness is one of the factors that has adversely impacted the spread of banking infrastructure, availability of credit, and consequently, industrial development in the State. In 2001, Credit Deposit Ratio (CDR) for Nagaland was only 13.6, the lowest in the country. The low CDR has hampered the ability of the State to break the vicious circle of remoteness and inability and attract capital flows due to overall resource-deficiency, which is made worse by the presence of continuous insurgency. Thus, Nagaland has been unable to effect key investments (government and private) to develop infrastructure and accelerate the growth of the economy.
The Per capita net state domestic product (NSDP) of the state of Nagaland at current prices was Rs. 20892 for the year 2005-06 against the all India figure of Rs. 29524 for the period. As per Basic Road Statistics of India, total length of road in the state in 2008 was 22,304 km. out of which rural road length was 22,209 km. and length of urban roads was 95 km only. The percentage of surface road to total road length for the same period was only 30.69 percent which is much lower than all India figure 57.82 percent. The statistical data on infrastructure of Nagaland related to 2001 census revealed the following facts: percentage of household in rural areas of the state having bathroom facility within the house was 32.2 percent whereas in urban areas it was 58.3 percent. In rural areas of Nagaland 47.3 percent of households availed the facility of type Pit Toilet within the house and 40.5 percent had this facility in urban areas. Distribution of households by source of lighting was 56.9 percent in rural areas and 90.3 percent in urban areas. The data pertaining to source of drinking water revealed that 44.3 percent households in rural areas had used tap as a source of drinking water facility, 1.6 percent used hand pump whereas 32.8 percent household in urban areas used tap and 6.1 percent used hand pump as a source of drinking water. The percentage of households having access to safe drinking water in rural areas of Nagaland in the year 2001 was 47.5 percent (Economic survey 2004-05). Population per post office (based on 2001 Census) of the state was 6,142 against all India figure 6,594, whereas area served by a post office was 50.93 sq. km. against all India figure 21.12 sq. km. The percentage of households by the type of permanent census houses was 9.4 percent in rural Nagaland whereas 43.6 percent in case of urban areas. According to Planning commission Report 2004-05, proportion of population below poverty line in rural areas of Nagaland was 22.3 against the all India figure 28.3 percent whereas the same for urban areas was 3.3 percent against the all India figure 25.7 percent. The percentage of
rural households of the state having electricity (as per 2001 Census) was 56.88 percent, much higher than the all India figure 43.52 percent. As on 31st March, 2008 out of 1,278 inhabited villages 823 villages (64.4 percent) were electrified (All India Electricity Statistics, Published by CEA, M/o Power). Inspite of satisfactory progress made in some dimensions of infrastructural facilities, many areas of the state still remain underdeveloped and inaccessible because of difficult terrain and inappropriate policy actions. The state level average figures largely conceal district level and regional disparities in infrastructure development of the state. District level study on the growth of infrastructure development and disparity, if any, in it in Nagaland is necessary to identify the gap and imbalances in infrastructure facilities available at district level, both in rural and urban areas, which will help in policy making for the overall development of the state.

1.3 Objectives of the Study

The present study has the following objectives to address:

(i) To study and examine the status of different indicators of social and economic infrastructure of the state over time.

(ii) To study and examine District-wise and rural-urban trend of infrastructural development of the state.

(iii) To study and examine District-wise disparity in the infrastructure of the state.

(iv) To study and examine the district wise rural-urban disparity in the infrastructure of the state.

1.4 Hypotheses of the Study

The present study attempts to test the following hypotheses:
(i) Disparity in economic infrastructure is higher than that in social infrastructure of the state.

(ii) Infrastructural development suffers from urban-bias in the state.

1.5 Significance of the Study

Nagaland is one of the states of North East (NE) India suffering from slow rate of economic development. The economy of the state is basically agrarian and out of total population of 19,88,836 (Census of India 2001), 16,35,315 persons lived in rural areas. Thus, 82.25 percent of the total population lived in rural Nagaland in 2001. The working population of the state is concentrated in the category of cultivators signifying the fact that the economy is land based. Due to diversified agro-climatic conditions and topography of the state, much wider base of infrastructure facilities is required in order to accelerate the pace of economic development.

Nagaland is an underdeveloped state. Among the many reasons for its tardy pace of development an important one is its lacking in infrastructural development. A study reported in the India Today 2004 (August 16) reveals that among ten small states in India, Nagaland scores quite poorly as is evident from the fact that it occupies only 7th position on the field of physical infrastructural development. As per a survey conducted by Planning Commission, Nagaland stands 7th from below in terms of social and economic infrastructure. Nagaland is ranked 11th among the States as per Human Development Index, 1991. As per index of social and economic infrastructure 2003, constructed by Centre for Development and Peace Studies (CDPS) India, Nagaland scored 76.14 in the scale of 0 to hundred and occupied 19th position among the 25 states of India.
Centre for Monitoring Indian Economy (CMIE) worked out State-wise Infrastructure Development Index and ranked 25 States of Indian territory by calculating Composite Development Index value in the year 2000. As per their Composite Development Index (CDI) value, Nagaland (with a value of 89.89) ranked 18 among the 25 states of the country in terms of infrastructure development.

As per Reports based on Index of Social and Economic Infrastructure (1999), Nagaland scored index value 76.14 and ranked 4th among the eight north-eastern states in India (Yojana, December 2006).

Infrastructure index presented in the Twelfth Finance Commission Report (Government of India 2004) ranks all states of the NE (including Nagaland) in the lowest category for access to physical infrastructure.

Absence of unanimity in the opinion of development economists about the precise linkages between infrastructure and economic development notwithstanding, the aggregate economic growth definitely benefits from adequate infrastructure facilities of high quality at reasonable cost. In recognition of this fact, Centre as well as State governments has consciously been promoting the growth of infrastructure facilities in India. Apart from the objective of attaining a higher rate of economic development, it was felt that judicious growth of infrastructure shall also help in minimizing inter-regional and intra-regional disparities. Nagaland has been no exception to this kind of thinking. Because of peculiar geo-climatic conditions of the state varying across different districts, the provision of adequate and effective infrastructure network assumes added importance in the state.

With nominal development at birth, the State government has been striving hard to develop the economy of Nagaland especially in economic and social
infrastructural front amid the other burning issues like restoring peace, protect the citizens and find a way to bring about a resolution of the Naga political problem through democratic and peaceful means.

As per State Human Development Report 2004, information related to infrastructure facilities available at district level for the year 2001 (Table 1.1) reveals that there had been unevenness among the districts regarding the availability of infrastructural facilities for that particular year. Some districts are ahead of particular infrastructure sector but lagging behind of other infrastructural services whereas other districts are lagging behind of some infrastructural services but ahead of other infrastructural dimensions.

<table>
<thead>
<tr>
<th>Infrastructure facilities</th>
<th>Kohima</th>
<th>Mokok-Chung</th>
<th>Tuen-sang</th>
<th>Phhek</th>
<th>Mon</th>
<th>Wokha</th>
<th>Zunhe-boto</th>
<th>Dimapur</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rural population service per PHC</td>
<td>16842</td>
<td>17820</td>
<td>35013</td>
<td>13538</td>
<td>40581</td>
<td>20567</td>
<td>3303</td>
<td>46122.5</td>
</tr>
<tr>
<td>2. Electrified villages (%)</td>
<td>99.34</td>
<td>100</td>
<td>96.81</td>
<td>100</td>
<td>100</td>
<td>98.15</td>
<td>100</td>
<td>98.68</td>
</tr>
<tr>
<td>3. Road length per 100 sq. km.</td>
<td>58.6</td>
<td>137.83</td>
<td>73.77</td>
<td>80.9</td>
<td>79.62</td>
<td>77.15</td>
<td>106.77</td>
<td>N.A.</td>
</tr>
<tr>
<td>4. Villages partially covered with drinking water facilities (%)</td>
<td>80</td>
<td>71.55</td>
<td>82.24</td>
<td>56.3</td>
<td>91.53</td>
<td>85.25</td>
<td>64.86</td>
<td>72.69</td>
</tr>
<tr>
<td>5. Villages fully covered with drinking water facilities (%)</td>
<td>18</td>
<td>25.86</td>
<td>13.13</td>
<td>36.66</td>
<td>7.63</td>
<td>7.38</td>
<td>31.53</td>
<td>15.42</td>
</tr>
<tr>
<td>6. Households in pucca houses (%)</td>
<td>6.02</td>
<td>18.62</td>
<td>5.74</td>
<td>11.64</td>
<td>0.50</td>
<td>18.9</td>
<td>10.36</td>
<td>21.67</td>
</tr>
<tr>
<td>7. Household in semi-pucca houses (%)</td>
<td>42.12</td>
<td>58.33</td>
<td>44.26</td>
<td>32.19</td>
<td>19</td>
<td>59.06</td>
<td>45.95</td>
<td>39.16</td>
</tr>
<tr>
<td>8. Households in kutcha houses (%)</td>
<td>50.14</td>
<td>23.04</td>
<td>45.08</td>
<td>54.79</td>
<td>78</td>
<td>22.05</td>
<td>42.79</td>
<td>37.26</td>
</tr>
<tr>
<td>9. Households with access to toilet facilities (%)</td>
<td>87.68</td>
<td>100</td>
<td>73.22</td>
<td>60.27</td>
<td>29</td>
<td>13.39</td>
<td>89.64</td>
<td>79.09</td>
</tr>
</tbody>
</table>

Source: State Human Development Report 2004
In this context, the study of development of infrastructure in the district of Nagaland is very much significant. It will portray a picture of existing infrastructure stock in the various districts of Nagaland and also the trend and disparities with respect to development of infrastructural facilities among the districts. The identification of prevailing stock of infrastructure and gaps in its development within the districts including their rural-urban areas will help in adopting egalitarian approach to accentuate the pace of development of the State.

It is in this background, the present study aims at the analysis of development of infrastructural facilities in the districts of Nagaland. At the same time, the study also focuses on disparities in the infrastructural development among the various districts of the state as a whole and rural urban taken separately.

The study will also help the policy framers to suggest suitable policy measures to develop rural infrastructural scenario. The study may raise some unsolved questions which will motivate the future research scholars to take up further research in this direction. The study may also help the Government of Nagaland in better targeting of schemes and projects within the Nagaland in order to reduce intra-regional disparity.

1.6 Chapter Planning

Chapter planning is an integral part of each and every research work. The present work has been developed on the basis of following plan of the study and accordingly chapterisation has been done.

Chapter 1: Introduction: This chapter covers role of infrastructure in economic development, statement of problem, objectives, hypotheses, plan of study or chapter planning, significance of study.
Chapter II: Review of Literature: This chapter deals with review of literature in three parts - review of works based on general studies on infrastructure, review of some important works on interstate and intrastate regional disparity and review of important works on infrastructure based on Nagaland economy.

Chapter III: Profile of Nagaland: This chapter provides an overview of the area of study. It has covered geographical location, climatic conditions, administrative set up, population characteristics, economy (agricultural and industrial scenario, sectoral contribution), plan expenditure etc.

Chapter IV: Conceptual Framework and Methodology: This chapter deals with the concept of what is infrastructure, measurement problem of infrastructure – different approaches. The methodology part explains the procedure of construction of Composite Index of Infrastructure particularly Composite Index of Economic Infrastructure, Composite Index of Education Infrastructure and Composite Index of Health Infrastructure followed by Infrastructural Development Index (IDI) based on composite index values, geographical coverage and time period and limitation of the study.

Chapter V: Data Analysis and Result Discussion: This chapter has five sections. The first section deals with trends and status of different variables related to economic as well as social infrastructure of the Nagaland since the attainment of its statehood to recent past.

The second section deals first with district-wise decadal growth of all three dimensions of infrastructure on the basis of selected indicators. Secondly it deals with district-wise rural-urban decadal growth of all three categories of infrastructure on the basis of selected indicators.
The third section deals inter-district disparities and inter-district rural-urban disparities in terms of absolute values of the selected indicators with the help of coefficient of variance on all three points of time.

The fourth section deals with technique of Principal Component Analysis to find the relative weights of the selected variables.

The fifth section deals with construction of composite index using of Principal Component Analysis method and V. Nath’s Method followed by the construction of Infrastructure Development Index. Results of the present study have also been discussed in this section.

**Chapter VI: Summary, Suggestion and Conclusion:** This chapter includes summary of the work, findings and conclusion of the entire research work and will put forward policy prescription.