

**URBANIZATION AND CIVIC INFRASTRUCTURE
FACILITIES: A CASE STUDY OF AIZAWL CITY**

**(A DISSERTATION SUBMITTED FOR THE AWARD OF THE DEGREE
MASTER OF PHILOSOPHY IN ECONOMICS)**

BY

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TO

**THE DEPARTMENT OF ECONOMICS,
SCHOOL OF ECONOMICS, MANAGEMENT AND INFORMATION SCIENCES,
MIZORAM UNIVERSITY**




2011

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CERTIFICATE

This is to certify that the dissertation entitled “**Urbanization and Civic Infrastructure Facilities: A Case Study of Aizawl City.**” by Shri. Lalmuankima Sailo has been written under my guidance.

The dissertation is the result of his investigation into the subject. This dissertation was never submitted to any other University for any research degree.

DECLARATION

I, Lalmuankima Sailo, do hereby declare that the M.Phil dissertation entitled **“Urbanization and Civic Infrastructure Facilities: A Case Study of Aizawl City”**, being submitted to the Department of Economics, Mizoram University for the degree of Master of Philosophy in Economics, is a record work carried out by me and this dissertation has not been submitted by me for any research degree in any other University or Institution.

(LALMUANKIMA SAILO)

III ACKNOWLEDGEMENT

First of all I would like to give thanks to God, Almighty for giving me good health and opportunity. I have completed my M.Phil dissertation entitled “**Urbanization and Civic Infrastructure Facilities: A Case Study of Aizawl City**” without much problem.

My heartfelt thanks goes to my supervisor Dr. Lalhriatpuii Assistant Professor, Department of Economics, Mizoram University, who gave me all through it is only because of her help that I am in a position to complete my M.Phil I would also like to thank her family members who have always been very supportive.

I would also like to take the opportunity to thank Mizoram University Library for providing me materials I need My sincere thanks also goes to the people of Zarkawt, Kulikawn and Vaivakawn area for attempting my humble questionnaire, I also give thanks to my friends who have always been very helpful.

My special thanks goes to my parents and to all my family members for their support and encouragement while doing my research.

(LALMUANKIMA SAILO)

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1. INTRODUCTION

Urbanization or urban drift is the physical growth of urban areas as a result of global change. Urbanization is also defined by the United Nations as movement of people from rural to urban areas with population growth equating to urban migration. The United Nations projected that half of the world's population would live in urban areas at the end of 2008.

Urbanization is closely linked to modernization, industrialization and the sociological process of rationalization. Urbanization can describe a specific condition at a set time, i.e. the proportion of total population or area in cities or towns, or the term can describe the increase of this proportion over time. So the term urbanization can represent the level of urban relative to overall population, or it can represent the rate at which the urban proportion is increasing

As more and more people leave villages and farms to live in cities, it results in urban growth. The rapid growth of cities like Chicago in the late 19th century and Mumbai a

century later can be attributed largely to rural-urban migration. This kind of growth is especially commonplace in developing countries.

The rapid urbanization of the world's population over the twentieth century is described in the 2005 Revision of the UN World Urbanization Prospects report. The global proportion of urban population rose dramatically from 13% (220 million) in 1900, to 29% (732 million) in 1950, to 49% (3.2 billion) in 2005. The same report projected that the figure is likely to rise to 60% (4.9 billion) by 2030. However, French economist Philippe Bocquier, writing in THE FUTURIST magazine, has calculated that "the proportion of the world population living in cities and towns in the year 2030 would be roughly 50%, substantially less than the 60% forecast by the United Nations (UN), because the messiness of rapid urbanization is unsustainable. Both Bocquier and the UN see more people flocking to cities, but Bocquier sees many of them likely to leave upon discovering that there's no work for them and no place to live.

Urbanization occurs naturally from individual and corporate efforts to reduce time and expense in commuting

and transportation while improving opportunities for jobs, education, housing, and transportation. Living in cities permits individuals and families to take advantage of the opportunities of proximity, diversity, and marketplace competition.

People move into cities to seek economic opportunities. A major contributing factor is known as "rural flight". In rural areas, often on small family farms, it is difficult to improve one's standard of living beyond basic sustenance. Farm living is dependent on unpredictable environmental conditions, and in times of drought, flood or pestilence, survival becomes extremely problematic.

In modern times, industrialization of agriculture has negatively affected the economy of small and middle-sized farms and strongly reduced the size of the rural labor market.

Cities, in contrast, are known to be places where money, services and wealth are centralized. Cities are where fortunes are made and where social mobility is possible. Businesses, which generate jobs and capital, are usually located in urban areas. Whether the source is trade or tourism, it is also through the cities that foreign money flows

into a country. It is easy to see why someone living on a farm might wish to take their chance moving to the city and trying to make enough money to send back home to their struggling family.

There are better basic services as well as other specialist services that aren't found in rural areas. There are more job opportunities and a greater variety of jobs. Health is another major factor. People, especially the elderly are often forced to move to cities where there are doctors and hospitals that can cater for their health needs. Other factors include a greater variety of entertainment (restaurants, movie theaters, theme parks, etc) and a better quality of education, namely universities. Due to their high populations, urban areas can also have much more diverse social communities allowing others to find people like them when they might not be able to in rural areas.

These conditions are heightened during times of change from a pre-industrial society to an industrial one. It is at this time that many new commercial enterprises are made possible, thus creating new jobs in cities. It is also a result of industrialization that farms become more mechanized, putting

many laborers out of work. This is currently occurring fastest in India.

As cities develop, effects can include a dramatic increase in costs, often pricing the local working class out of the market, including such functionaries as employees of the local municipalities. For example, Eric Hobsbawm's book *The age of the revolution: 1789–1848* (published 1962 and 2005) chapter 11, stated "Urban development in our period [1789–1848] was a gigantic process of class segregation, which pushed the new laboring poor into great morasses of misery outside the centers of government and business and the newly specialized residential areas of the bourgeoisie. The almost universal European division into a 'good' west end and a 'poor' east end of large cities developed in this period." This is likely due the prevailing south-west wind which carries coal smoke and other airborne pollutants downwind, making the western edges of towns preferable to the eastern ones. Similar problems now affect the developing world, rising inequality resulting from rapid urbanization trends. The drive for rapid urban growth and often efficiency can lead to less equitable urban development, think tanks such as

the Overseas Development Institute have even proposed policies that encourage labor intensive growth as a means of absorbing the influx of low skilled and unskilled labor Urbanization is often viewed as a negative trend, but can in fact, be perceived simply as a natural occurrence from individual and corporate efforts to reduce expense in commuting and transportation while improving opportunities for jobs, education, housing, and transportation. Living in cities permits individuals and families to take advantage of the opportunities of proximity, diversity, and marketplace competition.

1.1 Pseudo-Urbanization

Pseudo-urbanization is the condition in which a large city has formed in an area without a functional infrastructure to support it. As the population of an urbanized area grows, the city's infrastructure must grow with it, or else shortages will develop, typically in housing, education, transportation, clean water and waste removal services, or other services such as law enforcement. Overpopulation in urban areas is often characterized by shanty towns, where such services are inadequate or wholly absent. A city in which significant growth

in the absence of adequate infrastructure has taken place will be deemed "pseudo-urbanized".

Urbanization in the third world tends to consist primarily of pseudo-urbanization. This happens largely because of so-called "rural push": factors which push people from the countryside into the cities, without the city being prepared to accept them. Rural-urban migrants in the third world usually move into the cities due to poverty-related reasons, leading to a demographic explosion and a progressive concentration of poor migrants in the cities. This is a finite process, as one city can only hold so many people due to limited infrastructure and available resources.

Notwithstanding, the difference in definitions of constituents of urban areas in various countries, the degree of urbanization in India is amongst the lowest in the world. As per United Nations estimates, 47 per cent of total population of the world lived in urban areas in 2000. The percentage of urban population in Asia was 36.7 while that for Europe, South America and North America was 74.8, 79.8 and 77.2 respectively. With less than 28 percent of the total population living in cities and towns, India is less urbanized compared to

many countries. The pace of urbanization in India has also been slower as compared to other countries. United Nations estimates show that while the degree of urbanization in the world increased from 30 per cent in 1950 to 47 per cent in 2000 that for India went up from 17.3 in 1951 to 27.8 in 2001. China and Indonesia, which had lower levels of urbanization in 1950, have now overtaken India with the percentage of urban population being 32.1 and 40.9 respectively.

The Indian urbanization scenario is characterized by two significant features. First, there has been a massive growth in the absolute number of people living in urban areas. During 1951-2001 the country's urban population increased from 62.4 million in 1951 to 286.1 million in 2001. Second, there has been an increasing concentration of urban population in the Class I towns or 'cities' (with 100,000 or more). In 1991, about two-thirds of the urban population lived in 300 Class I UAs/Towns, which constituted less than 8 per cent of the total of 3,768 urban agglomerations in the country. While the census figures are not yet available for various size classes of towns in 2001, data on metropolitan population reveal that 32.5 per cent of the urban population lived in

metropolitan urban agglomeration/towns in 1991 and by 2001 the figure went up to 38.6 per cent. Table 3 shows the distribution of urban population by size class of urban agglomeration/town based on the available data. Table 4 shows the trends in the growth of population of metropolitan urban agglomerations/towns from 1901 to 2001.

1.2 Trends of Urbanization and its Economic and Environmental Effects

The trends of urbanization in India in recent decades indicate the following key features:

- (i) continued concentration of urban population in large cities and existing city agglomerations;
- (ii) Slowing down of urbanization during 1981-1991 and 1991-2001 as compared to 1971-1981 and 1961-1971; and
- (iii) Large variations in the spatial patterns of urbanization across states and cities. The pattern of population concentration in large cities reflects the spatial polarization of employment opportunities. This phenomenon has led to a tremendous pressure on civic infrastructure systems: water supply, sewerage and drainage, solid waste management, parks and

open spaces, transport, etc. It has also led to deterioration in the quality of city environments. In several cities, the problems of traffic congestion, pollution, poverty, slums, crime, and social unrest are assuming alarming proportions. However, there is also another side of population concentration in cities. Large cities are the engines of economic growth and generators of resources for national economic development.

1.2 (a) Economic effects

In recent years, urbanization of rural areas has increased. As agriculture, more traditional local services, and small-scale industry give way to modern industry the urban and related commerce with the city drawing on the resources of an ever-widening area for its own sustenance and goods to be traded or processed into manufactures.

Research in urban ecology finds that larger cities provide more specialized goods and services to the local market and surrounding areas, function as a transportation and wholesale hub for smaller places, and accumulate more capital, financial service provision, and an educated labor

force, as well as often concentrating administrative functions for the area in which they lie. This relation among places of different sizes is called the urban hierarchy. "Using the Gall-Peters Projection it is estimated that come 2015 the worlds urban population is set to exceed 4 billion, most of this growth is expected in Africa and Asia and China to be 50% urbanized.

1.2 (b) Environmental effects

The urban heat island has become a growing concern and is increasing over the years. The urban heat island is formed when industrial and urban areas are developed and heat becomes more abundant. In rural areas, a large part of the incoming solar energy is used to evaporate water from vegetation and soil. In cities, where less vegetation and exposed soil exists, the majority of the sun's energy is absorbed by urban structures and asphalt. Hence, during warm daylight hours, less evaporative cooling in cities allows surface temperatures to rise higher than in rural areas. Additional city heat is given off by vehicles and factories, as well as by industrial and domestic heating and cooling units. This effect causes the city to become 2 to 10° F (1 to 6° C) warmer than surrounding landscapes. Impacts also

include reducing soil moisture and intensification of carbon dioxide emissions.

Different forms of urbanization can be classified depending on the style of architecture and planning methods as well as historic growth of areas.

In cities of the developed world urbanization traditionally exhibited a concentration of human activities and settlements around the downtown area, the so-called *in-migration*. In-migration refers to migration from former colonies and similar places. The fact that many immigrants settle in impoverished city centre's led to the notion of the "peripheralization of the core", which simply describes that people who used to be at the periphery of the former empires now live right in the centre.

Urbanization can be planned urbanization or organic. Planned urbanization, i.e.: planned community or the garden city movement, is based on an advance plan, which can be prepared for military, aesthetic, economic or urban design reasons. Examples can be seen in many ancient cities; although with exploration came the collision of nations, which

meant that many invaded cities took on the desired planned characteristics of their occupiers. Many ancient organic cities experienced redevelopment for military and economic purposes, new roads carved through the cities, and new parcels of land were cordoned off serving various planned purposes giving cities distinctive geometric designs. UN agencies prefer to see urban infrastructure installed before urbanization occurs. Landscape planners are responsible for landscape infrastructure (public parks, sustainable urban drainage systems, greenways etc) which can be planned before urbanization takes place, or afterward to revitalize an area and create greater livability within a region.

I.3 CIVIC INFRASTRUCTURE FACILITIES

Like the gamut of communities within them, regions are complex creatures filled with individuals and organizations whose priorities frequently clash. Regions overcome these conflicts—some more successfully than others—through an intricate web of formal and informal mechanisms for bridging differences and establishing common direction. This web represents a civic infrastructure for building a shared sense of

belonging and purpose, facilitating the setting of shared goals and coordinating action.

In its effort to provide information on some of the more observable and quantifiable elements of civic infrastructure, the Regional Institute has divided the subject into two broad categories within the Regional Knowledge Network.

Civic engagement includes means by which people become involved in, and informed about, the community around them. Voting is the most visible and measurable means of civic engagement, while the existence and scale of special-interest groups—such as religious and labor organizations—represent more targeted and active means of engagement. Philanthropic efforts and the news media, meanwhile, aid civic engagement by supporting civic causes and providing access to critical information.

Assets that build a sense of civic unity, on the other hand, are building blocks of civic identity. These include vital amenities that contribute to a region's quality of life and sense of place, such as its libraries, parks, arts & cultural entities, the teams the region rallies behind and the historical assets that provide roots to its past. The data presented on RKN do not

represent the entirety of the regions' civic infrastructure. Rather, they provide a sample of the key mechanisms, assets and entities that characterize engagement and identity in Buffalo Niagara.

1.3 (a) Urban Infrastructure

Urban infrastructure includes water supply and sanitation which are important basic needs for improvement of the quality of life and enhancement of the productive efficiency of citizens. Generally, State Governments and Union Administrations, with financial and technical assistance from the Central Government, have planned and executed various schemes for providing drinking water and sanitation. The government of India launched the National Water Supply and Sanitation Programme in the First Plan itself with an outlay of Rs 49 crores (which was 1.5 per cent of the total Plan outlay); and this outlay had increased to Rs 16,700 crores in the Eight plan (3.8 per cent of the total outlay).

With steady increase in urban population on account of rapid industrialization, natural growth of population and migration from rural areas, the magnitude of water supply and sanitation problem in our bulging cities and towns is assuming

a critical dimension in the background of depleting ground water resources, environmental pollution, poor water supply and sanitation in slum areas and non-availability of proximate sources of water supply. In spite of the enormity of the problem, the Government of India has set bold targets of covering 100 per cent of the drinking water requirements of the urban population and 75 per cent of their sanitation needs.

Most urban infrastructure services are provided by Municipal corporations and Municipalities who fund their requirements largely by loans and grants from Central and State Governments. In order to supplement the efforts of urban development, the Government of India has depended upon the following agencies:-

(i) Life Insurance Corporation of India (LIC) which invests in urban infrastructure projects – like water supply, drainage, housing, power and transport – as a part of its statutory requirement.

(ii). The Housing and Development corporation Ltd. (HUDCO) is given the task of financing urban infrastructure. HUDCO provides infrastructure loans to STATE Urban

Finance corporations, Water supply and Sewage Boards, Municipal corporations, Improvement Trusts, etc; and

(iii) The Infrastructure Leasing and Financial services Ltd. which also finances urban infrastructure projects.

1.4 CIVIC INFRASTRUCTURE AND SERVICES FACILITIES TO CITIZEN

Infrastructure development, participatory municipal management, environmental protection and urban poverty alleviation are of critical importance. Unless urban development and environment are absolutely incompatible, urban policy should aim at coping with the growth of cities and towns rather than avoiding or thwarting this growth. The forces of agglomeration do contain hidden resources to meet the demands of economic growth and population concentration. Urbanization poses both challenges and opportunities. Urban policy is needed to convert these challenges into opportunities. Provision of infrastructure base for city economic growth and services for city residents is critically important for exploiting agglomeration economies and minimizing the negative impacts of population concentration.

7 Urban Local Bodies (ULBs) in India have been incurring

expenditures for the provision of the following civic services and infrastructural facilities to citizens and business:

- Conservancy Services and Solid Waste Management
- Water supply
- Surface and Underground Drainage
- Storm-water Drainage and Flood Control
- Roads, Bridges, Flyovers, Subways, Walkways etc.
- Street Lighting
- Pre-school and Primary Education
- Preventive Health Care and Control of Epidemics
- Malaria Control
- Prevention of Food Adulteration
- Maternal and Child Health Care Services
- Parks and Playgrounds
- Avenue and Block Plantations
- Town Planning – Zoning and Building Regulations
- Slum Improvement and Urban Community Development

- Licensing of Dangerous and Offensive Trades
- Regulation of Markets and Slaughter Houses
- Maintenance of Cattle Pounds
- Registration of Births and Deaths
- Maintenance of Crematoria and Burial Grounds.
- Rainwater Harvesting and Conservation.

People have talked forever about 21st century skills and 21st century education. We know that the emerging era is one of connectivity, of flow, and of data. There is a hard and a soft infrastructure that undergirds this existence, and much like cars, roads, and gas stations are part of the infrastructure of our 1950s transportation and urban design reality, the internet-based, Web-based, mobile-enabled, and network-based emerging reality is the reality that the brand new generation (following hard on the heels of the Millennial but the oldest being just about 10 years old right now) is stepping into.

The 74th amendment mandates urban local bodies to take up public health issues, sanitation and solid waste

management largely on their own. Small urban centers, however, lack financial and technical capabilities to design such projects. Recent interventions cater to big cities resulting in further marginalization of smaller centers.

The access to civic amenities such as electricity, drinking water, toilet facility, waste water outlet and clean fuel are critical determinants of the urban quality of life. As per the 2001 Census, urban India records about 13 per cent households without access to electricity, 16 per cent without safe drinking water and 27 per cent with no access to toilet facility. By 2005-06, these percentages have significantly declined for electricity and safe drinking water to roughly half of what they were in 2001 (National Family Health Survey-3). The decline has not been as significant for toilet facility as 17 per cent households still has no access to toilet facility in urban area. About one-fifth of urban households are also not covered by any sewer system, an issue that needs far more attention than other civic amenities in view of its close association with infectious and parasitic diseases. This issue has been recognized as one of the serious problems in the recent document of the Planning Commission (2008).

Slightly more than one-fifth of households having no access to toilet facility-in terms of numbers about 60 million urban population-has to resort to open defecation. This aspect is also closely associated with wastewater outlet and the provision of drainage. The proportion of households either with open or closed drainage was 78 per cent in urban areas in 2001. Further, the rural-urban gap in each of civic services is glaring.

National Infrastructure Equity Audit conducted in 125 gram panchayats in five States. There is a continued prevalence of deep-rooted caste-based inequity in the contribution and availability of infrastructure and, hence, of the accessibility of services and entitlements, a report has suggested.

The Scheduled Castes (SC), the Scheduled Tribes (ST) and minorities do not have access to functional infrastructure facilities as they are 'merely situated in the general or backward classes habitations,' according to the National Infrastructure Equity Audit done by the Social Equity Watch.

The audit is a first-of-its-kind study determining the access of different social groups to public infrastructure in

about 1,000 caste/religious habitations across five States. While village-level infrastructure investment has been crucial in developmental programmes, they are seldom equitably distributed. This equity audit has been done in 125 Gram Panchayats in Andhra Pradesh, Bihar, Karnataka, Orissa and Rajasthan.

At places where the infrastructure facilities are located in SC/ST habitations, a sizable percentage of the service providers are from the general or backward classes' category. Further, most of these infrastructure facilities are in private lands or buildings.

The public infrastructure include, primary school, anganwadi centre, health sub-centre, drinking water, primary health centres, community centre, Panchayat Bhavan, road, Public Distribution System, post office, secondary school, telephone and information kiosk.

The rating of services by SC/ST and minorities in accessing these facilities was much lower than their backward class and general counterparts in the same habitations. The satisfaction gap was largely due to location of services in other habitation.

1.4 (a) City level pattern

India's 286 million urban populations, as per the 2001 Census, is distributed across 5000 odd towns and cities with different size classes. It is expected that the provision of civic services is directly related to the size of urban centers. Toilet facilities are astonishingly low (close to 60 per cent) in small and medium size urban centres as are the electricity and supplies of drinking water. As far as the access of LPG is concerned, cities in general have advantage in the use of clean fuel - LPG as four-fifth of the households use LPG. However, there is large variation amongst cities with varying population. The use of LPG is as low as 26 per cent in small urban centres where many households still depend on coal, charcoal and wood as source of fuel having health implications because of indoor pollution.

Analysis shows that there are huge gaps in terms of access to civic amenities in urban areas. The small and medium size towns have lower access compared to cities. Such disparate situation has to be seen in the context of the 74th amendment to the Indian Constitution introduced in 1992 which mandates the urban local bodies to take up several

areas of urban planning and development including public health, sanitation and solid waste management. It is expected that urban local bodies would generate their own funds to meet their needs. This requires enormous investment in infrastructure projects on water, sanitation, recreation and transport. Many small urban centers have no financial capacity, they also lack technical capabilities to design projects and raise funds from the market. On one hand, the state governments have not suitably empowered them to take up urban governance independently including the power to raise money through taxation and market. On the other, several state governments have abolished octroi - a major source of income to the urban local bodies. The central government's urban development policy through Jawaharlal Nehru National Urban Renewal Mission is designed to serve a handful of big cities. This is likely to marginalize the small urban centers further despite their playing important roles in the development of trade and commerce in the rural areas.

1.4 (b) State level patterns

The situation with regard to the availability of electricity is better compared to access to drinking water and toilet facility in urban areas of most of the states although there is much variation. For example, in 2005-06, the availability of electricity varies from 74 per cent in urban Bihar to 100 per cent in the urban Sikkim and Mizoram. The period between 2001 and 2005-06 shows significant improvement in electrification of the households in most of the states as also for other amenities, i.e., toilet facility, drinking water and clean fuel. Orissa has one of the lowest percentages of households with toilet facility (59 per cent) followed by Chhattisgarh (65 per cent). In contrast, virtually all households have toilet facility in the north-eastern states of Tripura, Sikkim, Nagaland and Mizoram. Developed states of Punjab, Haryana and Maharashtra have almost all households covered in having access to safe drinking water supply. Similarly, the states with good monsoons, e.g. Uttar Pradesh, Bihar and West Bengal also show good coverage of urban households with safe drinking water supply. The use of clean fuel like LPG varies

from 36 per cent in the urban areas of the states of Jharkhand and Orissa to about 90 per cent in the states of Himachal Pradesh, Sikkim and Mizoram.

The regional disparity in the pattern of civic amenities closely follows the level of urbanization and per capita income at the state level. Apart from economic reasons, there are a variety of natural, social, cultural and behavioral factors that determine the access and use of civic services like toilet facility, drinking water and clean fuel. For example, the pit latrines are very common in both rural and urban areas of north-eastern states whereas access to safe drinking water is low in most of the north eastern states as large number of households depends on streams and rivulets for water. Similarly, Kerala also shows a very low percentage of households with safe drinking water (48 per cent) as people use well water for drinking purposes as elucidated in a paper titled 'Regional Distribution of Infrastructure and Basic Amenities in Urban India' by A Kudus, S Bagchi, and D Kundu in 1999 published in the Economic and Political Weekly. In the states where use of LPG is higher, the availability of electricity is also higher. Toilet facilities are not significantly related to the

civic amenities such as electricity, supply of drinking water and use of LPG in the urban areas of states and UT. Earlier studies have also pointed out that increasing level of development does not necessarily reflect improvement in the provision of sanitation facility at the household levels.

The Jawaharlal Nehru National Urban Renewal Mission, the single largest initiative of the Centre for planned development of cities and towns, was launched on December 3, 2005 with an investment of Rs 1, 00,000 crore for the mission period of seven years beginning 2005-06. At the end of seven years, cities and towns under the plan are expected to achieve this much.

However, the central government's programme to improve infrastructure in cities to match their rapid urbanization has not cut much ice with urban planners. They said that they mission's aim to encourage reforms and fast-track planned development with focus on efficiency in urban infrastructure has gone for a toss. The sustainability and appropriateness of JNNURM projects in Mumbai, Pune, Nagpur, Nashik and Nanded are being questioned.

1.5 AREA OF STUDY

The study area is Aizawl City, the capital of Mizoram. The city of Aizawl has a population of 404054 according to 2011 census. Three localities namely, Zarkawt, Vaivakawn and Kulikawn are randomly selected and named as locality I, II, and III accordingly. A total of 123 questionnaires were distributed in these localities. Questionnaires were distributed to one percent of the total population of each locality, 30 in locality I, 40 in locality II and 53 in locality III respectively.

1.6 METHODOLOGY

The following research methodologies were adopted to carry out the proposed work.

The study was based on primary and secondary sources. Primary data was obtained from extensive field survey. Questionnaires were prepared to collect primary data/information from the urban dwellers of Aizawl city. The city of Aizawl has a population of 4,04,054 according to 2011 census. Three localities namely, Zarkawt, Vaivakawn and Kulikawn are randomly selected and named as locality I, II, III accordingly. A total of Questionnaires were distributed in these

localities. Questionnaire were distributed to one percent of the total population of each locality, 30 in locality I, 40 in locality II and 53 in locality III respectively.

The data collected was tabulated and analyzed. The secondary data was collected from various government documents, journals, books, national Sample survey organization, Census of India etc.

1.7 OBJECTIVES

1. To study the factors that contributes to the growth of Aizawl city.
2. To study the access to civic infrastructure facilities such as water, electricity, LPG, drainage system, roads etc within Aizawl city.
3. To study the economic and social effects of urbanization in Aizawl city and to suggest measures to tackle the problems of urbanization.

1.8 RESEARCH QUESTIONS

1. Does growth of Aizawl city creates problems of civic Infrastructure facilities and will civic amenities become even more privatized?

2. Do the effects of urbanization have a positive impact on the economy and social behavior of the urban residents of Aizawl city?
3. Does the State government focused attention on the integrated and inclusive development of various services for the citizens?

1.9 CONCLUSION

Mizoram holds great attraction for the tourist because of its beautiful natural resources such as hills, mountains, rivers, and forests. However, these resources are increasingly under threat as the state has been growing at faster pace than before in the past few years. Rapid development activities in the state result in increased traffic, in turn leading to air and noise pollution, increased pressure on accommodation, increased solid and liquid waste generation leading to pollution of river and ground water. Haphazard encroachment and deforestation cause landslides and soil erosion. Therefore the study of civic infrastructure facilities is necessary to improve infrastructural facilities in Aizawl city and help create durable public assets and quality oriented services in the city.

REVIEW OF LITERATURE

Recent developments, such as inner-city redevelopment schemes, mean that new arrivals in cities no longer necessarily settle in the centre. In some developed regions, the reverse effect, originally called counter has occurred, with cities losing population to rural areas, and is particularly common for richer families. This has been possible because of improved communications, and has been caused by factors such as the fear of crime and poor urban environments. Later termed "*white flight*", the effect is not restricted to cities with a high ethnic minority population.

When the residential area shifts outward, this is called suburbanization. A number of researchers and writers suggest that suburbanization has gone so far to form new points of concentration outside the downtown both in developed and developing countries such as India. This networked, poly-centric form of concentration is considered by some an emerging pattern of urbanization. It is called variously exurbia, edge city, network city, or postmodern city. Los Angeles is the best-known example of this type of urbanization.

In his book *Whole Earth Discipline*, Stewart Brand argues that the effects of urbanization are on the overall positive for the

environment. Firstly, the birth rate of new urban dwellers falls immediately to replacement rate, and keeps falling. This can prevent overpopulation in the future. Secondly, it puts a stop to destructive subsistence farming techniques, like slash and burn agriculture. Finally, it minimizes land use by humans, leaving more for nature.

Eric Hobsbawm's book *The age of the revolution: 1789–1848* (published 1962 and 2005) chapter 11, stated that Urban development in our period [1789–1848] was a gigantic process of class segregation, which pushed the new laboring poor into great morasses of misery outside the centers of government and business and the newly specialized residential areas of the bourgeoisie. The almost universal European division into a 'good' west end and a 'poor' east end of large cities developed in this period. This is likely due the prevailing south-west wind which carries coal smoke and other airborne pollutants downwind, making the western edges of towns preferable to the eastern ones. Similar problems now affect the developing world, rising inequality resulting from rapid urbanization trends. The drive for rapid urban growth and often efficiency can lead to less equitable urban development, think tanks such as the Overseas Development Institute have even proposed

policies that encourage labor intensive growth as a means of absorbing the influx of low skilled and unskilled labor.

In the 1980s, this was attempted to be tackled with the urban bias theory which was promoted by Michael Lipton who wrote: "...the most important class conflict in the poor countries of the world today is not between labor and capital. Nor is it between foreign and national interests. It is between rural classes and urban classes. The rural sector contains most of the poverty and most of the low-cost sources of potential advance; but the urban sector contains most of the articulateness, organization and power. So the urban classes have been able to win most of the rounds of the struggle with the countryside...". Most of the urban poor in developing countries able to find work can spend their lives in insecure, poorly paid jobs. According to research by the Overseas Development Institute pro-poor urbanization will require labor intensive growth, supported by labor protection, flexible land use regulation and investments in basic services.

When in the early 1950s economists turned their attention to the problems of population growth and economic development in the LDCs, it was thus natural to think that policies which emphasized industrialization would not only increase national incomes, but also

relieve the overpopulation of the countryside. However, during the 1960s this view came to be increasingly challenged when it became apparent that inequality and poverty has persisted despite respectable growth in GNP. This challenge has now led to the new orthodoxy in which rural-urban migration in the LDCs is viewed as a symptom of and a contributing factor to underdevelopment. The new orthodoxy is due mainly to Todaro (1969) and Harris-Todaro (1970) which models has provided a widely accepted theoretical framework for explaining the urban unemployment in many LDCs.

Research in urban economics suggests that cities have played a key role in the development of national economies of the developed world during their days of fast urbanization. The National Commission on Urbanization Report 1988 stressed the role of Indian cities as reservoirs of capital and skills, centers of knowledge and innovation, sources of service sector employment, generators of public financial resources for development and hopes of millions of rural migrants. It is estimated that Urban India contributes to more than 60 per cent of the country's Gross Domestic Product (GDP). Within Urban India, it is large cities that generate the bulk of the GDP. While city or district level estimates of GDP and resource mobilization are not readily available, it is well-established that cities

contribute significantly to the exchequers of State Governments and Government of India. For example, the share of two districts containing Hyderabad city and 10 surrounding Municipalities in Andhra Pradesh, namely Hyderabad and Ranga Reddy Districts, had only 9.5 per cent share in the population of the State comprising 23 districts in 2001. However, the percentage shares of these two districts in the total collection of key state taxes: Commercial Tax, Excise, Stamp Duty and Registration and Motor Vehicles Tax were many times more than their demographic shares.

India: Urban Poverty Report 2009 says that sloppy city planning and urban land management have left the slum dwellers deprived of basic amenities and livelihood opportunities. Exploring the dynamics of growing urbanization and poverty, the report aims to sensitize policymakers on protecting the interests of unprivileged population.

According to United Nation (1993), 40 percent of the population in developing countries was to live in urban areas. In the less develop regions; the percentage of population living in urban area will reach 50 percent only by 2015. By the year 2025, About 4 billion urban resident are projected to live in less develop regions

and by the year 2030, two third of the population in developing countries will live in Urban areas.

Rudder Datt and K.P.M. Sundharam (1965), An urban area has thus been defined as follows: (a) all places with a municipality, corporation, cantonment board or notified town area committee, (b) all other places which satisfy the following criteria: (i) a minimum population of 5,000; (ii) at least 75 per cent of male working population engaged in non-agricultural pursuits; and (iii) a density of population at least 400 persons per sq. km.

Lampard's 1992:92 cited that 'city growth is simply the concentration of differentiated but functionally integrated specialisms in rational locales. The modern city is a mode of social organization which furthers in economic activity' (Lampard, 1995: 92).

JP Yadav (2004), in rural-urban migration, it is observed that the brighter and more energetic boys and girls leave the rural areas and move to cities. It requires more than an average amount of energy and initiative to cut off home ties and move into unknown, environments. Internal migrants have better hereditary qualities.

Much of urban policy, as Brian Berry observes, is actually unconscious, partial, uncoordinated and negative. It is unconscious

in the sense that those who affect it are largely unaware of its proportions and features. It is partial in the sense that a few of the points at which governments might act to manage urbanization and affect its course are in fact utilized. It is uncoordinated in that national planning tends to be economic and urban planning tends to be physical, and the disjunction often produces competing policies. It is negative in that the ideological perspective of the planners leads them to try to divert, retard or stop urban growth, and in particular to inhibit the expansion of metropolitan and primate cities. This general statement almost entirely applies to India.

Some experts are of the view that the slowdown in urban growth in the recent decades provides a disturbing signal which reflects the failure of governments to cope with the demands of industrialization and urbanization in adequate fashion. The fact that our urban economies have not been able to support job creation in manufacturing and tertiary sector to absorb rural migrants is considered as a cause of grave concern.

Mohan (1996) surmises that inadequate infrastructure investments might have inhibited industrial and tertiary sector growth in cities leading to too few jobs being generated in the non-agricultural economy, particularly in manufacturing during 1981-91.

The lack of job opportunities, compounded by worsening of the quality of life in urban areas, might have discouraged the prospective rural migrants to search for jobs in cities. Mohan (1996) further observes that the deceleration of urban growth could as well be contributing to greater immiserisation rather than caused by greater rural prosperity. These observations apply to the trends in urbanization during 1991-2001 and call for policies to address the serious infrastructure bottlenecks in our cities and towns – for both backlog and growth needs and to exploit the full potential of cities and towns to contribute to national economic development.

Government of India (GoI) embarked on an urban renewal mission (JNNURM) in 2005 and raised investment plans for urban water supply, sanitation (WSS), transportation and housing by 20X to Rs6.2 tn (\$133 bn) in XIth plan from the Xth plan. Whilst the plan appears large, actual investment has been dismally low at \$17 per capita/ annum in comparison to China's US\$116. In Mc Kinsey's report, "India's Urban Awakening", he highlighted that India needs to invest \$1.2 tn (\$130/capita/annum) in its cities over 2010-30, 20X the amount spent over the last decade. However, even if we consider a 75% implementation ratio to the suggested investment plans, we expect Rs1 tn (\$23 bn) to be invested annually in the next

five years (2010-15) followed by Rs1.6 tn (\$35 bn) to be invested annually over the next five years (2015-20). These numbers are achievable and these are much closer to the investments suggested in the XIth plan: Rs6.2 tn (\$133 bn) over 2007-12 i.e., Rs1.25 tn (\$27 bn) annually. Given the high civil intensity of segments such as transportation and housing (which may also account for ~80% of total investments), we believe that urban infrastructure can create a construction business opportunity (considering 60% construction intensity) of Rs7.8 tn (\$173 bn) over the next decade or \$14 bn annually for next five years followed by another five years of demand for \$21 bn annually of construction services.

3.1 Introduction:

Mizoram is one of the seven northeastern states of India and is enclosed by Myanmar, Bangladesh, Manipur, Assam, and Tripura. In the local language, Mizoram means "Land of the Highlanders". The Mizo Hills, which dominate the state's topography, rise to more than 6560 ft near the Myanmar border. Aizawl, the state capital, is 4000 ft above sea level. The state's population, which included 5, 52,339 males 5,38,675 females, accounted for 0.09 per cent of India's total population, according to the report.

About three-fourths of the population earns their livelihood from agriculture. Paddy, maize, mustard, sugarcane, sesame, fiber less ginger and potatoes are the other prominent crops grown in this area. Small-scale irrigation projects are being developed to increase the crop yield. There are no major industries in the state. Small-scale industries include sericulture, handloom and handicrafts industries, sawmills and furniture workshops, oil refining, grain milling, and ginger processing. The service sector comprises of Tourism, Real Estate and Insurance.

3.1: Map of Mizoram



Source: www.mapsofindia.com

Nearly 52 per cent of Mizoram's population of a little more than 10 lakhs is living in urban areas. Mizoram's population, according to the provisional population totals for Census 2011, is 10, 91,014, of which 5, 29,037 (48.49 per cent) are living in rural areas and 5, 61,977 (51.52 per cent) are living in urban areas. According to provisional population totals paper-II volume-I, the rural population has increased by 81,470 and that of urban by 1, 20,971 during the last ten years.

The decadal growth rates in rural and urban areas have been 18.20 per cent and 27.43 per cent. The state capital district Aizawl has registered the highest urban population with 3, 12,837 people living in the city while Mamit district has seen the lowest urban population at 14,809. Lawngtlai district in southern Mizoram has seen the highest rural population with 96,555 people living in villages while Saiha district also in south has the lowest rural population at 31,301.

Though gender imbalance in the population remains in Mizoram, it has seen improvement in the sex ratio which has

grown from 935 in 2001 to 975 in 2011. Sex ratio for the age group 0-6 has also increased from 964 in 2001 to 971 in 2011 and that of seven years and above also grown from 930 in 2001 to 976 in 2011.

The increase in rural areas has been 27 points from 923 in 2001 to 950 in 2011 and that of urban has been 52 points from 948 in 2001 to 1000 in 2011. While Aizawl district has recorded the highest sex ratio in total at 1009 and in urban at 1028, Saiha district has registered the highest sex ratio in rural at 984, the reports said.

Aizawl is a bustling town in the remote northeast part of India. It is the scenic capital of the northeastern state of Mizoram. It is the largest city in the whole state with an area of 3576 square kilometers. Aizawl literally stands for "the home of the highlanders", is located at an altitude of 3500 feet above sea level which has been rightly proved by the beauty and people of the city. The city comes under the administrative district of Aizawl and is thus, the center of all prominent government offices, state assembly house and civil secretariat. Aizawl is positioned at an altitude of 1,132 meters above the sea level, on the north of Tropic of Cancer. The city makes a nature delight with River Tlawng flowing softly in the

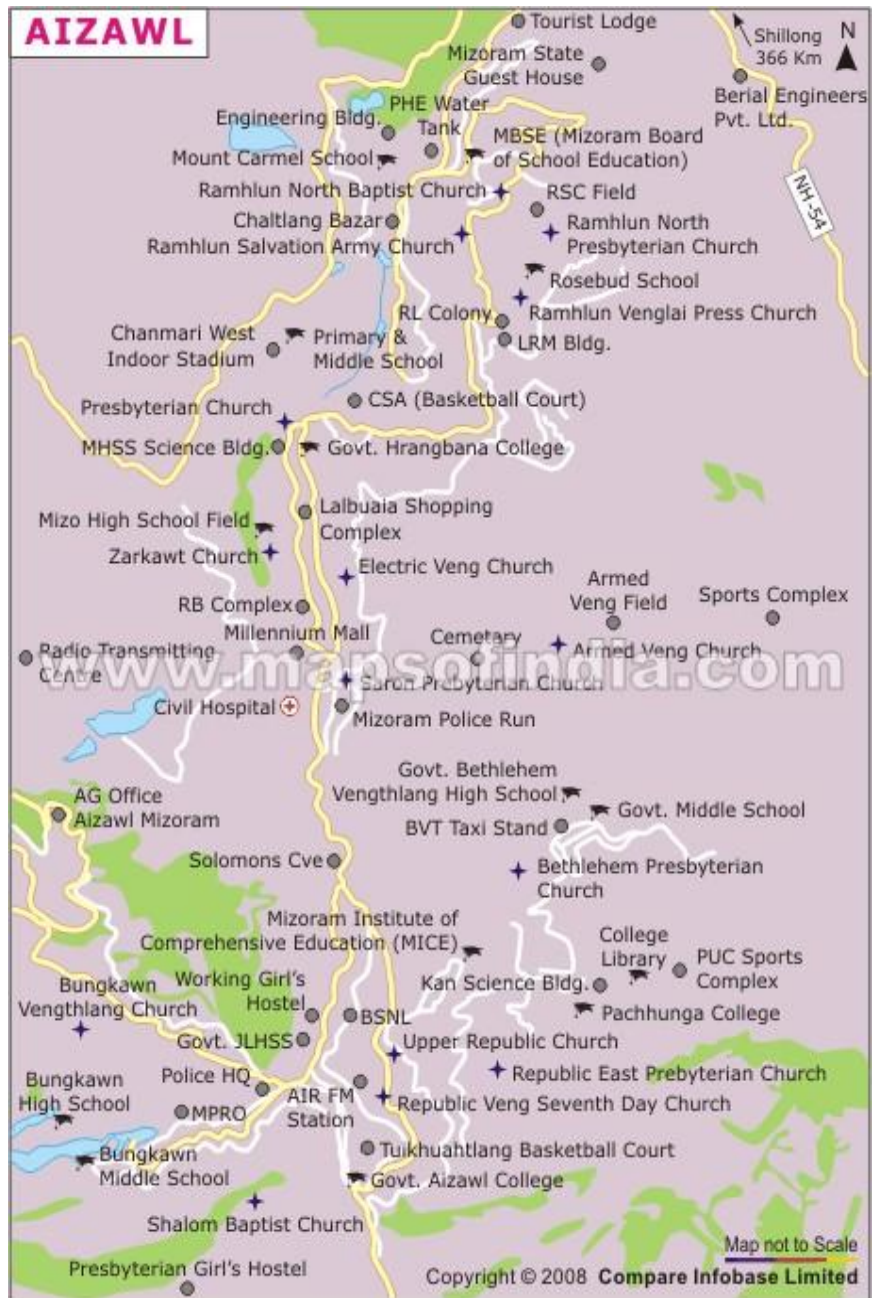
east and serrated hills of Durtlang in its north. Aizawl has a rich tribal cultural burlesque and is blessed with natural beauty. It is well known for its exotic handicrafts worldwide.

3.2 Geography of Aizawl

Aizawl is situated towards the central part of the state and is flanked by rivers and rapids. It is at a distance of 466 km from Guwahati, 366 km from Shillong, and 140 km from Silchar. Aizawl is connected by road with Silchar through National Highway 54, with Agartala through National Highway 40 & with Imphal through National Highway 150. The Yellow & White Taxis are widely available, Maruti Taxis are widely used. The Blue & White Mini bus is being operated by Private operators.

The Durtlang Hills constitute a natural barrier immediately south of Aizawl, their high ridges punctuated by Mizo villages and Christian missions, and provide pleasant rambling country. Aizawl perches precariously on the steep slopes of a sharp ridge, straddling the watershed between the Tlawng and the Tuirial river valleys at an altitude of 1100 m.

Map 3.2: Map of Aizawl City



Source: www.mapsofindia.com

Although it may lack a snowy Himalayan backdrop, it has something of the feel of a Himalayan hill station. Due to its location, Aizawl has a humid subtropical climate with mild summers (20⁰ C - 30⁰ C) and cool winters (11⁰ C - 21⁰ C). The best time to visit this naturally blessed town is from the month of October to May.

3.3 Tourism

Tourism is one of the prominent businesses for Aizawl but most of its economy is sustained by government services and several major banks. Aizawl has some remarkable picturesque landscapes, which ideally attracts nature lovers to this remotely located tourist destination. It is an eminent religious and cultural hub for people of Mizoram called Mizos. Apart from the landscapes, it boasts of a variety of other places famous for sightseeing like Bara Bazar (shopping paradise), Luangmual Handicrafts Centre (for handicrafts), Mizoram State Museum, Durtlang Hills, Bung (a picnic spot), Paikhai and Tamdil Lake.

3.4 Profile of Aizawl City 2001 and 2011 Census years

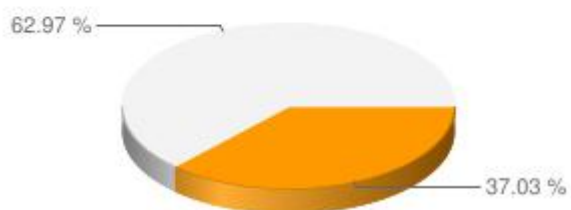
In 2011, Aizawl had population of 404,054 of which male and female were 201,072 and 202,982 respectively. There was change of 24.07 percent in the population compared to population as per 2001. In the previous census of India 2001, Aizawl District recorded increase of 38.07 percent to its population compared to 1991.

The initial provisional data suggest a density of 113 in 2011 compared to 91 of 2001. Total area under Aizawl district is about 3,576 sq.km.

Average literacy rate of Aizawl in 2011 were 98.50 compared to 96.51 of 2001. If things are looked out at gender wise, male and female literacy were 99.01 and 98.00 respectively. For 2001 census, same figures stood at 96.75 and 96.26 in Aizawl District. Total literate in Aizawl District were 346,465 of which male and female were 172,974 and 173,491 respectively. In 2001, Aizawl District had 269,699 in its total region. With regards to Sex Ratio in Aizawl, it stood at 1009 per 1000 male compared to 2001 census figure of 952. The average national sex ratio in India is 940 as per latest reports of Census 2011 Directorate.

In census enumeration, data regarding child under 0-6 age were also collected for all districts including Aizawl. There were total 52,324 children under age of 0-6 against 46,223 of 2001 census. Of total 52,324 male and female were 26,375 and 25,949 respectively. Child Sex Ratio as per census 2011 was 984 compared to 973 of census 2001. In 2011, Children under 0-6 formed 12.95 percent of Aizawl District compared to 14.19 percent of 2001. There was net change of -1.24 percent in this compared to previous census of India. Aizawl District population constituted 37.03 percent of total Mizoram population. In 2001 census, this figure for Aizawl District was at 37.03 percent of Mizoram population.

Proportion of Aizawl



Description	2011	2001
Actual Population	404,054	325,676
Male	201,072	166,877
Female	202,982	158,799
Population Growth	24.07%	38.07%
Area Sq. Km	3,576	3,576
Density/km2	113	91
Proportion to Mizoram Population	37.03%	36.65%
Sex Ratio (Per 1000)	1009	952
Child Sex Ratio (0-6 Age)	984	973
Average Literacy	98.50	96.51
Male Literacy	99.01	96.75
Female Literacy	98.00	96.26
Total Child Population (0-6 Age)	52,324	46,223
Male Population (0-6 Age)	26,375	23,428

Female Population (0-6 Age)	25,949	22,795
Literates	346,465	269,699
Male Literates	172,974	138,783
Female Literates	173,491	130,916
Child Proportion (0-6 Age)	12.95%	14.19%
Boys Proportion (0-6 Age)	13.12%	14.04%
Girls Proportion (0-6 Age)	12.78%	14.35%

The Economy of Aizawl is basically sustained by Government services as it is capital of Mizoram. The major banks are also located within Aizawl.

3.5 Civic Administration

The Aizawl Municipal Council is in charge of Civic Administration of Aizawl City. It was formed in 2010 with 19 Members. The Congress ZNP party Coalition was voted to power with 10 members and is being administered by one Council Chairman, Vice Chairman and three Executive members.

3.6 Transport

Air

Aizawl is connected by Air through Lengpui Airport which it is situated near Aizawl. The Airport provides connectivity to Kolkata Netaji Subhash Chandra Bose International Airport , Guwahati Airport and Imphal Airport. Air India, Kingfisher Airlines, Jet Airways are the three regular airlines which operate flights to and from Lengpui Airport. The North East Shuttle also links the state with Guwahati. You can also reach Aizawl Via Silchar Airport in Assam. The Government is also undertaking a project for a helicopter service within the state.

Rail

Mizoram is connected by Railroad up to Bairabi, there are plans to connect Bairabi with Sairang with Broad Gauge Railway track near Aizawl.

3.7 Media

The Major newspapers are local dailies in Mizo Language such as Vanglaini, The Zozamtimes & The Aizawl

Post. The State Run Doordarshan provides both national & local coverage. Local news in Mizo language is also transmitted by LPS and Zonet. LPS Channel 1 is now viewable in several states of India and neighboring Countries. All India Radio also has a studio that host programs at scheduled hours. FM Zoawi is a popular radio station in Aizawl.

3.8 Education

Education in Aizawl was mainly run by missionaries. Schools run by the Baptist Church of Mizoram, the Presbyterian Church of India, several Roman Catholic religious orders & the Seventh Day Adventists are among the best schools in Aizawl. Pachhunga University College was among the earliest college founded in 1958. Aizawl College, the second eldest college in Aizawl City was established in the year 1975. Mizoram University established in 2001 provides affiliation to all the Colleges in Mizoram. Plans are being made to start a medical college, a National Institute of Technology & Indian Institute of Mass Communication.

3.9 Urbanization and civic infrastructure facilities in Aizawl city

There are a number of factors responsible for the high growth of urban population in the state. Migration people from rural areas to urban areas in search of livelihood are one of the major reasons. Natural growth of population i.e. birth rate is higher than dead rate in urban areas, expansion of town areas especially addition of new towns to the already existing ones in 1981. Differential provision of physical infrastructure near roads and high differential development investment in Aizawl district are some of the factors responsible for the growth of urban population.

While there are large number of benefits associated with urbanization, there are some serious problems that it gives rise to the state capital Aizawl along with other major towns in Mizoram is now having civic problems as in the case of any other growing towns in India. These problems are in the nature of civic inconveniences, creation of problems in water supply, electricity, LPG, sanitations and congestion in traffic movements (traffic jam, which is frequent in Aizawl) etc. another serious problem pertaining to urbanization is the

excess of population which can find no jobs, inflation, land encroachment, local transportation, etc.. the overcrowding has led to many evils like drugs peddling distilling of illicit liquor, diseases and degradation, crime cruelties etc. other social problems arises such as petty thefts, burglaries which have become rampant at the outset of Christmas and New year festival and may be attributed due to lack of proper economic opportunities for the unemployed youth. Maintenance of livelihood become difficult it leads to degrading moral and laxity adversely affecting the social life thereby creating challenges of formidably character to the church and other social organizations like Young Mizo Association (YMA).

3.9 (a) Public Health Engineer (PHE)

Another major problem facing the whole Mizoram in the area of human settlement is the lack of water. Safe and sufficient water supply is basic need of human settlement and form an essential part of the infrastructure which enables it to function properly. Urban water supply is dealt by state Public Health Engineer (PHE) Department. Consequent upon high density of population in Aizawl and other major town's very large proportion of urban dwellers are faced with serious

problems of water supply. The location of major cities like Lunglei, Kolasib etc on hill top further aggravated the problem. The availability of pure and safe water on ridge tops and adjacent slopes is very limited in this terrain. Hence it imposes severe strain on households on fetching water from source in the valley bottom or from spring along the hill slopes. The majority of households in both urban and rural areas have adopted the rain water harvesting technology. All major towns in Mizoram face deficiency in water supply.

The Public Health Engineer (PHE) Department looks after Aizawl city using Greater Aizawl Water Supply Scheme (GAWSS) Phase – I and Phase – II. Phase – I has been use for a long time. It is programmed to meet the need of about 80000 people. Though Phase – II is not yet completed to satisfaction, it has also been in use and is scheduled to feed 250000 people.

GAWSS Phase-I and Phase-II is programmed to meet the need of about 330000 people. The present population density of Aizawl city is 404054. Apart from this, there are many hotels and restaurants coming up in the city. Aizawl city also harbored many guests and visitors from outside too. The

demand for water is increasing day by day scarcity of water is the major problem.

Due to poor power supply, the PHE Department is also facing a big problem to pump water. The department can start pumping water only after 10 pm, when the power is not much in use by the city dwellers. In addition to this, the pumping machines have been in use since very long and have grown old and outdated. So, they are not fit to take heavy load.

The pumped water is stored in 3 main reservoirs, Laipuitlang-1 and Tuikhuahtlang-2. From here water is distributed to different 45 Zonal Tanks. Water is distributed equally to people from the Zonal tanks. The Department can pump 16 Million Liters daily at present. If the pumping work can be distributed to every public points and private connections every week.

To meet the daily demand of water for the city, 105 Mlt needs to be pumped daily comparing with the present supply we get, there is a very wide gap. What has to be kept in mind is that our water pumps have grown old and they cannot be subjected to heavy duty. Otherwise it would break down any

moment. Due to increasing population in the city, scarcity of water will remain our unsolvable problems.

According to the Department report, at present there are 23846 private connections and 1680 Public points in Aizawl city. The PHE workers can public water smoothly if the power supply is good they work very hard for the people.

PHE Department is taking steps to supply water proportionately and regularly to people. Many Zonal tanks are under construction and will be completed shortly. The department is also trying to fit water meter under Asian Development Bank to every connection holders within this year.

Under AWSS Phase-II the department is also planning to give water supply to Durtlang area. For this purpose, a tanky is on the process. The water supply will be extended to Sihphir area also when this construction is completed. Supply tanks are being replaced by T- cluster which is it great help to meet the need. The main problem is that the amount of supply is too much inadequate for the increasing number of people. If this is not solved, this will be our great problem in the future.

Though the department reports that, they distribute water to each connection every week. There are times some connections get the supply only once a month. At the same time people should be aware that PHE supply water is to be used it for multipurpose like washing clothes, cleaning our vehicles etc. most of all our connection supply does not include vehicle cleaning purpose at all. Due to insufficient water supply, there is lots of water tank lorry available on hire. This in a way creates income for the water tank lorry owners. To meet the high demand of water, it is highly recommended that we built rain water storage tanks.

The Government should also take step and think of ways to solve this problems more seriously. Due to increasing population our forest are being cut down which cause our source of rivers and water to dry up. It proper steps are not taken; we are face to face more serious problem than the present.

3.9 (b) Power and Electricity (P&E)

There are about 54921 connections under Power and Electricity (P&E) Department in Aizawl city. The monthly power demand for the city is 1072,512 kilowatt. Since our

state is not at all self-supporting in almost every aspect. We depend very highly at the mercy of our neighboring states.

With the increasing city population our demand for power is also increasing at very high rate. As our state does not have power generating unit, it is very natural that we face power supply problem. Our needs also increase with the developing world. Today we cannot live without many things with which we could live without previously. The users of commodities like TV, Fridge, computer, washing machines etc are increasing day by day, these results in the increasing demand of daily power supply.

Power supply is our basic need in today's world. Industry, workshops cannot etc cannot function without it our big problem is we doubt have any power generating unit while our power demand is increasing daily. And our power demand will keep increasingly day by day.

There are high mast in 15 places, LED light in 109 places, Street light in 3110 places in Aizawl city. Though many street lights have been set up in the city, they are still very insufficient. It would be very convenient if more streetlight

could be set up in remote and smaller areas is the wish of the city dwellers.

Excluding the power used in industries and workshop, the power that we used only for lights is about 80 Mega watts. Even though the department is putting much effort in this regard it can be of no much help consumers should remind our self of this problem with which we could live without. So we should reduce our power consuming to the least possible. We can use CFL bulbs rather than high power consuming bulb. We can also save power by switching off lights when not in use.

3.9 (c) Urban Housing

In the field of urban housing in Mizoram especially the state capital Aizawl City manifest the existence of large housing deficiency. Only 50% of the inhabitants in Aizawl city are having their own houses, remaining 50% stay on rented houses. The scenario is not better in other town also.

Unplanned building construction in hill slopes cause destruction especially during rainy season. As most the towns are characterized by high concentration of population, there is

a high demand for more houses for accommodation. This urges people to construct buildings along the slide prone dangerous slopes. A survey conducted by the Town and Country Planning in 1993 show that out of 21,639 households only 352 (11.70%) were designed by the technical experts like architect, engineers and planner. In the absence of proper and regulation the methods of house construction on steep slopes are not economical and too risky.

Urban Development & Poverty Alleviation Dept. (UD&PA) was created on August 24, 2006 by the Government of Mizoram to facilitate various sub-missions under the new initiative of Govt. of India pertains to Urban Development, viz. JNNURM and Urban Development Scheme to be funded under ADB in addition to existing schemes of Urban Development. Moreover, Urban Development & Poverty Alleviation Department has also been entrusted to Urban Developmental Programme in a twenty three (23) Census Towns including Lawngtlai Town which is a District Headquarters. Municipality of Aizawl and Aizawl Development Authority and Urban Poverty Alleviation Programme (SJSRY)

also falls under the umbrella of Urban Development & Poverty Alleviation Department.

There are 23 Census Towns (including Lawngtlai Town which is one of the District Hqrs.) in Mizoram which are likely to be dealt under the umbrella of Urban Development & Poverty Alleviation Department.

Solid waste and garbage disposal is another problem in Aizawl city. Presently, collection and disposal of garbage is dealt by the Local Administration Department (LAD), in fact the present quantum of solid waste generated in Aizawl city alone is more than 125 tons per day where as only 35 tons are disposed of directly to the dumping site, on the roadsides in unhygienic manner causing much nuisance and creating unhealthy environment in the city. The unbalanced growth of town with inadequate accessible roads has created solid waste collection and disposal extremely difficult.

3.10 Aizawl Municipal Council (AMC)

The origin of the Aizawl Municipal Council (AMC), and outline the composition and powers of the AMC. Problems faced by the AMC and its future prospects will also be analyzed.

3.10 (a) Origin

For long, Aizawl have been having Village Councils although it became an urban settlement for much of post-Independence period. In spite of people's demand for establishing Municipality for Aizawl in line with the 74th Constitutional Amendment (1993), hitherto no political party or state government really demonstrated a willingness to have one. It is therefore interesting to note that the AMC owes its origin to the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), a pressure exerted from Delhi.

JNNURM was launched in the country by Dr. Manmohan Singh, the Indian Prime Minister in December 2005. JNNURM envisaged addressing infrastructural deficiencies, poor service delivery systems and poor governance in 63 selected cities including Aizawl. The

JNNURM made it compulsory on the part of state governments receiving funds for city infrastructural developments to necessarily carry out reforms such as starting Municipalities and holding elections for such decentralized Urban Local Bodies (ULB).

The state government then enacted *The Mizoram Municipalities Act, 2007*. The said Act was notified on April 20, 2007 (It came into effect from this date). The act provides for establishment of: (a) A Municipal Board for a specified transitional area, (b) A Municipal Council for a smaller urban area, (c) A Municipal Corporation for a larger urban area.

The AMC started functioning from July 1, 2008 at its office at Thuampui Veng, Aizawl. The Council office was headed by Chief Executive Officer.

And on June 12, 2007 the State Government of Mizoram, Urban Development & Poverty Alleviation Department of Mizoram and the Union Ministry of Urban Development signed a tripartite Memorandum of Agreement (MoA). The MoA explicitly binds the state government to implement reform agenda under the JNNURM (such as

establishment of ULB under 74th Amendment), failure to do so would entail withholding subsequent installments of grants given by the centre to the state of Mizoram.

The first election to the 19-member AMC held in November 2010 saw the Indian National Congress and Zoram Nationalist Party alliance forming the council (INC=5, ZNP=5) and the opposition alliance Mizo National Front and the Mizoram People Conference trailing by just one seat (MNF=5, MPC=4).

3.10 (b) Compositions

The AMC consists of 19 elected members representing 19 Wards of the city of Aizawl and others appointed by the Governor of Mizoram. Roughly one-thirds (i.e.6) of the total membership is reserved for women, these six seats shall be rotated after every five years. The tenure of the Council is five years.

A Member of Lok Sabha from Mizoram and an unspecified number of Members of Legislative Assembly representing the Municipality area shall also be members without voting rights. On November 12, 2010 the state

government appointed 12 persons as members of the Board of Councilors.

There is a Board of Councilors consisting of the 19 elected members and others appointed by the Governor. This BOC, headed by the Chairman, is similar to the State Legislative Assembly. It is the highest decision-making body of the AMC.

There is an Executive Council of the AMC consisting of the Chairman and the Vice Chairman, both elected by the elected Councilors, besides three members of the Executive Council known as *Executive Councilors*, to be appointed by the Chairman. The Chairman is the executive head of the AMC. The EC exercises all the executive powers of the AMC.

There is a Ward Committee in every Ward. The Ward Committee consists of a Chairman, who is an elected Councilor from that Ward, and two members each from all the Local Councils within the Ward. Besides this, the Ward Committee Chairnan shall appoint three others from amongst prominent citizens of the Ward, one of which shall be a woman. The term of the Ward Committee is five years.

There shall be, in each locality, a Local Council. A locality having less than 1500 voters can have five members and a locality with more than 1500 voters can have seven members. The term of the Local Council is three years. It may be noted that since November 24, 2010 all the Village Councils in Aizawl have functioned as Local Councils. There are currently 78 Local Councils in Aizawl city.

3.10 (c) Powers and Functions

Chapter VI of the Mizoram Municipalities Act, 20017 (As amended in 2009) contains a list of the powers and functions of the AMC, reproduced here in Toto:

Functions of Municipality

(1) Every Municipality shall

- a. Provide, on its own or arrange to provide, through any agency the following core municipal services:
 - i. water supply for domestic, industrial, and commercial purposes,
 - ii. drainage and sewerage.
 - iii. solid waste management,

- iv. preparation of plan-for economic development and social justice,
 - v. communication systems including construction and maintenance of roads,. footpaths, pedestrian pathway, transportation terminals, both for passengers and good, bridges, over-bridges, subway, ferries and inland water transport system,
 - vi. transport system accessories including traffic engineering schemes, street furniture, street lighting, parking areas and bus stops,
 - vii. community health and protection of environment including planting and caring of trees on road sides and elsewhere,
 - viii. markets and slaughter house.
 - ix. promotion of educational, sport and cultural activities, and
 - x. aesthetic environment, and
- b. perform such other statutory or regulatory functions as may be provided by or under this Act or under any other law for the time being in force.

(2) The Municipality may, having regard to its managerial, technical, financial and organizational capacity, and the actual condition obtaining in the municipal area, decides not to take

up, or postpone the performance of, any of the function as aforesaid.

(3) The State Government may direct a Municipality to perform any of the functions as aforesaid, if such function is not taken up, or is postponed, by the Municipality.

(4) The Municipality may plan, build, operate, maintain or manage the infrastructure required for the discharge of any of the functions, as aforesaid, either by itself or by agency under any concession agreement referred to in 58 -A.

Discretionary functions of the Municipality:

“A Municipality may, having regard to the satisfactory performance of its core functions which shall constitute the first charge on the Municipal Fund, and subject to its managerial, technical and financial capabilities, undertake or perform, or promote the performance of any of the following functions:

(1) in the sphere of town planning, urban development and development of commercial infrastructure,

a. Planned Development of new areas for human settlement.

- b. Measures for beautification of the municipal area by setting up parks and fountains, providing recreational area, improving river banks, and landscaping.
- c. Collection of statistics and data, significant to the community, and
- d. Integration of the development plans and schemes of the municipal area with the district or regional development plan, if any.

(2) in the sphere of protection of environment,

- a. Reclamation of wastelands, promotion of social forestry and maintenance of open spaces.
- b. Establishment and maintenance of nurseries for plants, vegetables and trees and promotion of greenery through mass participation.
- c. Organization of flower-show and promotion of flower-growing as a civic culture, and.
- d. promotion of measures for abatement of all forms of pollution;
- e. Construction and maintenance of cattle pounds,
- f. Provision for unfiltered water supply for non-domestic uses,

- g. Advancement of civic consciousness of public health and general welfare by organizing discourses, seminars and conferences, and
- h. Measures for eradication of addiction of all kinds including addiction to drug and liquor.

(3) in the sphere of education and culture,

- a. promotion of civic education, adult education, social education and on-formal education,
- b. promotion of culture activities including music, physical education, sport and theaters and infrastructure therefore,
- c. advancement of science and technology in urban life,
- d. publication of municipal journals, periodicals and souvenirs, purchase of book, and subscription to journal, magazines and newspapers,
- e. installation of statues, portraits and pictures in appropriate manner,
- f. organization, establishment and maintenance of art galleries and botanical or zoological collections, and
- g. Maintenance of monuments and places of historical, artistic and other importance.

Notwithstanding anything contained in this Act but subject to the provisions of any State law relating to planning, development operation, maintenance and management of Municipal infrastructure and services, a" Municipality may, in the discharge of its functions specified in section 57, section 58, and section 59,

- a. promote the undertaking of any project for supply of Urban environmental infrastructure or services by participation of a company, firm, society, trust or anybody corporate or any institution, or government agency or any agency under any other law for the time being in force, in financing, construction, maintenance and operation of such project of a Municipality irrespective of its cost,
- b. consider and approve the undertaking of any project relating to urban environmental infrastructure or services by a company, or firm, or society, or body corporate in terms of a private sector participation agreement or jointly with any such agency, and
- c. Consider and approve the undertaking of any project relating to urban environmental infrastructure or service by any institution, or government agency or any agency under any

other law for the time being in force, or jointly with any such agency.

In the discharge of its obligations for providing urban environmental infrastructure and services in relation to water-supply, drainage and sewerage; solid waste management, communication systems and commercial infrastructure, the municipality may, wherever considered appropriate in the public interest,-

- a. discharge any of its obligations on its own, or
- b. enter into any private sector participation agreement.

Transfer of functions of State Government:

- a. Notwithstanding anything contained in this Act or in any other law for the time being in force, the State Government may, subject to such conditions as it may think fit to impose, transfer, by an order published in the Official Gazette, to a Municipality any such functions and duties relating to Government under any law which the State Legislature is competent to enact, or which is otherwise within the executive power of the State, and appear to relate to matters arising within a municipal area being of an administrative character,

and shall, on such transfer, allot to the Municipality such fund and personnel as may be necessary to enable the Municipality to discharge the functions and duties transferred.

b. Without prejudice to the generality of the provisions of subsection(1), the State Government may transfer to the Municipality such functions and duties as are performed by the departments of the State Government on any of the following matters:

c. *town and country planning;*

d. *urban development;*

e. *water supply and sanitation;*

f. *transport system including regulation of traffic terminus;*

g. *employment schemes and programmes;*

h. *health and family welfare;*

i. *relief and social welfare including social security schemes and programmes;*

j. *public works including road construction and housing;*

a. *cottage and small-scale industries, business and services including programme for skill development;*

b. *education including primary education, adult education, vocational education, social education, non formal education, audiovisual education and library services;*

- c. *food and supplies including rationing and distribution;*
- a. *civil defense;*
- b. *fire protection and fire-fighting;*
- c. *sports and youth services*
- d. *Welfare of the Scheduled Castes and the Scheduled Tribes;*
- e. *environmental safety and improvement;*
- f. *social forestry and plantation programme.*

1. Where any function or duty under any law is so transferred. such law shall have effect as if this section has formed a part of such law, and thereupon such law shall be deemed to have been amended accordingly

Besides this, the AMC also have the power of taxation as per Section 210 of the same Act, it says:

Every municipality may levy,

- a. *Property tax; and*
- b. *a profession tax;*
- c. *a tax on carriages and animals;*
- d. *a tax on carts, and*
- e. *advertisement tax other than advertisements published in newspapers.*

It may be noted that the Act contains more or less similar subjects contained under the 12th Schedule of the Indian Constitution as incorporated by the 74th amendment. For the benefit of comparison between the Act and the 12th Schedule, the latter is reproduced here in Toto:

Subjects/Power transferred so far

The first actual transfer of power from the state government to the AMC was regarding the transfer of management of Ch.Chhunga Bus Terminal at Thuampui Veng and Ch.Saprawnga Truck Terminal at Rangvamual Veng on May 27, 2009.

Eight subjects are presently being considered by the state government for transfer to the AMC, they are: Solid waste management, slum improvement and up gradation, urban poverty alleviation, parks and gardens, burials and burial grounds, cattle ponds and animal controls, street lighting including parking lots and public conveniences, slaughter house and markets.

Sources of finance Sources of finance for the AMC are:

1. Finance Commission of India, grants for local bodies- Panchayati Raj Institutions and Urban Local Bodies,
2. Grants from the state government,
3. Internal resource mobilization through taxation,
4. Loan borrowing from external sources, with the prior approval of the state government.

3.10 (d) Prospects

The AMC is set for a very crucial and challenging road ahead. In spite of its late start than the rest of India and some problems at hand, there are reasons to hope that the AMC would someday be a very vibrant urban local body.

It has already been noted that the JNNURM has very clearly bound the state government as well as the AMC to carry out some crucial reforms aimed at strengthening the AMC. There is another set of reforms agenda set in motion through Asian Development Bank program called the North Eastern Region Capital Cities Development Investment Program, launched since 2009 in the five NE state capitals of Aizawl, Tripura, Gangtok, Kohima and Shillong. This ADB-

aided program, much like the JNNURM, makes it mandatory on the part of the state government and the AMC to necessarily implement both institutional and infrastructural reforms with regard to governance of the AMC, urban amenities and infrastructure in Aizawl with a view to eventually make the AMC to fully sustain itself financially as well by 2017.

Most of all, the people of Aizawl are by and large enthusiastic about the AMC. They seem to be quite keen to see a vibrant and effective Municipal Council in their capital city.

3.10 (e) Problems

Some of the problems being faced by the AMC may be noted here very briefly: Lack of political will - the state government is reluctant to hand over power to the AMC; various state government departments are reluctant to hand over responsibilities to the AMC; the AMC staff, Councilors and the public alike are still in the dark about the actual functions and role the AMC.

There is a need to spread awareness about the AMC and its current problems so that political pressure is exerted

on the state government or any future government to make the AMC a truly democratic and efficient ULB. The media should be roped in to play a big role here.

4.1 INTRODUCTION

The Constitution (74th Amendment) Act, 1992 assigns a critical role to 'elected' local representatives of the people in matters relating to local public service delivery, urban planning including town planning and district and metropolitan planning. It prescribes urban planning including town planning and planning for economic and social development as legitimate functions of elected urban local bodies. It also mandates that not less than four-fifth of the total members of a District Planning Committee are elected by, and from amongst, the members of the panchayat at the district level and municipalities in proportion to the ratio of rural and urban population in the district. Similarly, it is mandatory that not less than two-third of the members of a Metropolitan Planning Committee are elected by, and from amongst, members of the municipalities and chairpersons of the panchayats in the metropolitan area in proportion to the ratio of the population of municipalities and panchayats in that area.

National Institute Rapid urbanization means that India needs heavy investment in urban water, transportation and (affordable) housing infrastructure. Public reports suggest that in next 20 years India's investment in urban infrastructure will be 20X its investment in the past decade. We believe unless funding, governance and policy challenges are addressed, investments could be lower than the required \$1.2 tn. Construction companies and technology providers (in water/transportation) will be the key beneficiaries. Urbanization amplifies infrastructure deficit whilst the degree of urbanization in India is one of the lowest in the world (~30%), India's urban population of Urban Affairs and World Bank). This pace of urbanization has not only exposed India's urban infrastructure deficit but also highlighted that the deficit backlog is increasing at a rapid pace. Government of India (GoI) sponsored and UN studies highlight that the severe supply deficits in basic urban services (water, sanitation, transportation and affordable housing) will raise 2-4X if investments continue at the current pace.

As revealed by the Census 2001, by the turn of the 20th century, population of India had crossed the one billion mark.

With the growth in the total population, India's urban population has been growing at a faster rate than in the past. While over the past two decades, the average annual growth rate of the total population has shown a downward trend (the rate plummeted from 2.4% in 1981-91 to 2.2% in the 1991-2001 decade), the annual average growth rate of the urban population pushed up to 3.2 % in the 1991-2001 decade from 2.3 % in 1981-1991 decade.

This trend of growing urbanization is expected to continue in the coming decades with continuing migration from rural to urban areas. Notwithstanding the decline in the overall annual rate of growth of total population, the urban population is expected to continue to grow at 3% or even more over the next 20 years. With the rural-urban population as it is now, India cannot yet be considered as a highly urbanized country. However, the urban populace in relation to total population is continually increasing. From 20% low in 1971, the population living in urban areas had grown to 28% by 2001 and is expected to reach 40% by 2021. The current urban population of about 285 million is therefore expected to be more than double (550 million) over the next 20 years,² an average

addition of more than 14 million new urban residents every year. In absolute terms, an urban population of more than half a billion is a daunting challenge.

4.2 URBAN INFRASTRUCTURE

Over a third of India's population lives in urban areas. There are 35 urban agglomerations with population of more than one million, and about 37 per cent of the total urban lives in these million-plus cities. Urbanization in India is increasing steadily.

The current wave of liberalization and globalization is expected to place a heavy demand on all kinds of urban infrastructure and services.

Urban infrastructure services have some peculiar features.

- Most urban infrastructure services are natural monopolies and their marginal cost declines over a very large range of output.
- Certain infrastructure services being necessities, like water, have almost inelastic demand. Private provision of these could result in exploitative pricing unless prices are regulated.

- Requirement of heavy investment in capital equipment discourages private sector entry in to certain infrastructure segments.

The above features have for long been used as valid arguments for blocking entry of the private sector infrastructure. The arguments however are slowly losing their validity due to many technological and organizational innovations. Technological innovations in the areas of sanitation and sewerage have permitted low-cost supply options.

Not sufficient attention has been paid to development of mass rapid transport systems in most major cities. In fact, urban transport is one of the most important components of urban infrastructure which has been neglected due to various reasons. A good network of roads coupled with efficient mass urban transport system makes a substantial contribution to the efficiency of the cities and enables them to become catalyst of the economic and social development. The city, however, lacked an efficient mass system. The setting up of the Delhi Metro Rail Transit System which was inaugurated on December 24, 2004, is expected to bring about a great

improvement in efficiency and quality of life of the citizens of Delhi. The city roads are inadequate for traffic requirements, leading to congestion and fast deterioration in quality of roads due to excess loads.

Use of low-cost technologies like that of Sulabh Shauchalayas must be promoted. Solid waste disposal services can be unbundled and most functions entrusted to the private sector. This is one area where privatization has shown consistent productivity gains and cost reductions. Clubbing water supply and drainage projects together can reduce project cost and improve viability. Similarly, road development and storm-water drain management can be clubbed with commercial development of adjacent areas.

Urban infrastructure services are provided by local level agencies. Funds have generally been in the form of loans/grants from the Central and State Governments. Own resources of local bodies are generally insufficient to meet expenditure on services assigned to them. Considering the growing strains on the resources of the central and the state Governments, the concept of cost recovery has become

relevant, and a commercial approach to these services is required.

4.3 URBAN TRANSPORT

India has an extensive road network of more than 3.3 million km, making it one of the largest in the world. Roads in India, for the purpose of their management and administration, are divided into the following categories:

- National Highway
- State highway
- District Roads
- Rural Roads and
- Special purpose Roads (for military, ports etc,)

Under the constitution, responsibility for the development and maintenance of National Highway rests with the central Government while all other roads are the responsibility of the state Governments concerned.

National highways are the prime arterial routes spanning about 58,112 km throughout the country and cater to about 45 per cent of the total road transport demand. Over the

years, roads have grown in prominence as a mechanism for moving goods and people in the country.

While the national highways are intended to facilitate medium and long haul intercity passenger and freight traffic across the country, State Highways are supposed to carry the traffic within the state. Together, they provide the main mobility function in the transportation system. District roads and village roads serve to connect villages to provide accessibility and market linkages. Major district roads provide the secondary function of linkages between the main roads and the rural roads.

Presently, the National Highways are being developed, maintained and managed under an agency system. The overall responsibility including planning, budgeting, standardization is handled by the Ministry of Surface transport. The Government of India, under an Act of Parliament in 1988, established the National Highways Authority on India (NHAI) for developing maintaining and managing the National Highways as a single agency. Presently, the functions relating to externally aided projects, implementation of the policy of

private sector participation and development of wayside amenities along the National Highways are with the NHAI.

After the imposition of the fuel cess of Re.1 per liter on diesel and petrol, the financing of the National Highways Development Programme (NHDP) became feasible. Proceeds from the cess are also being used to provide financing for state and rural roads. NHDP for the Golden Quadrilateral (GQ) is well underway. The GQ was scheduled to be largely completed by the end of 2003. The North-South-East-West Highway is expected to be completed by 2007.

NHDP comprises of about 5,846 km of GQ, connecting the four metros of Delhi, Mumbai, Chennai and Kolkata, and about 7,300 km long North-South and East-West corridor connecting Srinagar-Kanyakumari and Silchar-Porbander. The NHAI is the implementing agency for the project. Phase 1 of the NHDP, consisting of the GQ, commenced in December 2000.

The financing of NHDP is based on funds from the Central Road Fund (CRF), multilateral financing agencies like World Bank, Asian Development Bank and Japan Bank for International Cooperation, market borrowing and private

sector contribution. The NHDP is to cost Rs 54,000 crore, at 1999 prices of which Rs 30,300 crore will be spent on GQ project (NHDP Phase I).

For the implementation of NHDP, innovative contractual agreements are being explored, involving methods such as annuities. Under the annuity method of financing, the developer is paid the annuity over the concession period after an independent engineer certifies that quality of service available to the road users is accordance with the concession agreement. This is an attractive mechanism for contracting for two reasons:

- Annuity contract aligns the incentives of the developer to build and maintain the road well, so as to be able to earn revenues from tolls and
- When there are many candidates routes on which new roads can be built, the annuity model allows a market-driven allocate mechanism.

Another significant step for road development in the country was taken when Pradan Mantri Bharat Jodo Poject for development of 10,000 km of roads connecting State with national Highways was launched in January 2004.

Another important problem of our cities, particularly in our metropolitan cities is the extreme inadequacy of public transport facilities, as a result of which the number of personalized vehicles has increased rapidly in urban areas in the last few decades. In many cities, the vehicle population has reached alarming proportions in relation to the road and network available. With high density of population, and scarcity of land, there is almost no scope for accommodating more vehicles and meet the growing demand for transport. Besides, control of energy consumption in order to check dangerously growing urban population point out to the need for rapid increase in public transport and rail-based transport. Some half-hearted steps have been taken in this direction in Delhi and other major metropolitan cities.

4.4 DEVELOPMENT IN SELECTED METROPOLITAN CITIES IN INDIA

NAGPUR: The final process to implement 24x7 water supply scheme in Nagpur has commenced. Nagpur Municipal Corporation (NMC) has transferred 427 staffers of water works department (WWD) on deputation to its special purpose

vehicle - Nagpur Environmental Services Limited (NESL) - which started functioning from September 1.

The 24x7 water supply scheme sanctioned under Union government's ambitious scheme - Jawaharlal Nehru National Urban Renewal Mission (JNNURM) - has been delayed by more than two years due to various reasons including strong protests from citizens and social organizations. The government had sanctioned funds of Rs 387.86 crore for implementation of the scheme. The funds will be taken back if NMC fails to implement the scheme before March 31, 2012.

After missing several dates, the civic body has now asked the operator to take over the water works from September 15, 2011. However, the operator may not be able to take over before October 1 due to delay in completion of few works. After the takeover, NESL has to transfer its staffers on deputation to the operator for a period of 18 months. With a few days remaining, NMC has transferred the staffers to NESL and started its functioning. NESL has been established as per conditions of JNNURM with a motive to run the water works on no-profit-no-loss basis. WWD is functioning on loss due to 50% water losses for last many years.

Orange City Water Ltd (OCWL) will be the operator which would execute 24x7 water supply schemes and operate water works for a period of 25 years. After emerging as the lowest bidder, NMC issued letter of intent to M/s Veolia Water (India) Private Ltd on November 18, 2010. As per Lol, the company was to take over within 120 days that was on March 18. But the process got delayed. As it is mandatory to have a local partner, France-based Veolia has collaborated with city-based Vishwaraj Infrastructure Limited and formed OCWL. Before taking over, NMC will sign a memorandum of agreement with OCWL. Then, the entire water supply right, from treatment plants to consumer-end, billing and collection, will be handed over to OCWL for 25 years.

The latest deadline of handing over water works to a private company may lead to strong protests. Cooperators, citizens and social organizations are opposing the scheme due to inordinate delay in completion of pilot project in Dharampeth zone and also failure to achieve the desire goals.

PUNE: The Election Commission of India's ordinance imposing the model code of conduct in Pune district, ahead of the Khadakwasla assembly constituency by-elections will have

an impact on the infrastructure development works yet to be carried out in the city. Since April this year, the Pune Municipal council (PMC) has started just 25% works approved in the 3,247-crore budget this year.

The code of conduct was applicable for the entire district till October 17, 2011. In December, another code of conduct will again come into effect for the civic elections, scheduled for February next year. This means the PMC has just November 2011 to complete the civic projects. The estimated cost of the ongoing and planned projects is Rs 22,000 crore.

The PMC had approved the annual budget of Rs 3,247 crore on the backdrop of last three civic budgets that have run into deficits. The city was short of funds for infrastructure development. The code of conduct will impose heavy financial burden on the PMC, fear politicians and civic officers.

The PMC prepares Departmental Schedule of Rates (DSR) every year, based on market rates of material. Based on this schedule, tenders are floated and contract rates are fixed. The standing Committee chairman expressed that for the last 2-3 years, the market rate of steel, iron and other

construction material has been increasing continuously and the trend will continue. The DSR rates will rise by 10% to 20% by next year. The PMC has not been able to execute development works this year, so all these works will have to be completed next year with the new DSR rates. In this case, the PMC will have to shell out more money than estimated for the work and this will incur loss of approximate Rs 400 crore to the PMC.

Already, the civic body is facing fund crisis, as per observations made by former municipal commissioner Mahesh Zagade while presenting the budget for 2011-12. The administration had an idea that shortage of funds will create problems for structural development. In fact, the city has a history of short-sighted development in the last 30 years to 40 years. Instead of the requirement for 15% roads, the city has just 6% to 7% roads as compared to its expanse.

It is a fact that the PMC will have to keep all budget works pending if the central election commission sticks to its decision to impose the model code of conduct in the entire district. We feel that the code of conduct should be imposed only in the constituency which is going for by-polls. All party

leaders have asked the civic administration to communicate with the state election commission and get a clarification on the order. We feel the PMC will suffer if the election commission sticks to its stand.

Congress leader in the PMC Aba Bagul said the PMC should take legal opinion in this regard. He said that the election commission ordinance is being misinterpreted. The code of conduct is applicable to the constituency where the election is conducted. The code of conduct does not permit any announcement of new works or inaugurations by politicians. But the PMC has already prepared the budget and it has to execute the same. This will not be breach of the code of the conduct.

RAJASTHAN: Rajasthan Urban Infrastructure Development project has been visualized with the purpose to optimize social and economical development for Jaipur city by supporting investments in urban infrastructure and services required to meet basic human needs and facilitating policy reforms to strengthen urban management. Under this ADB funded project, the component of work involved rehabilitation and replacement of existing sewer lines and laterals, existing

wells, including replacement of pumps and transformers, construction of new wet wells and sewage treatment plants.

The services also included review of feasibility studies, preparing procurement packages, surveys and field investigations, conceptual and detailed engineering design, bid documentation and evaluation plus construction supervision.

In an effort to ameliorate problems associated with insufficient infrastructure and the negative health consequences, which ensue from such inadequacies, the State of Rajasthan in collaboration with and with support from the Asian Development Bank implemented the comprehensive Rajasthan Urban Infrastructure Development Project (RUIDP) which will help meet critical infrastructure construction and rehabilitation needs in six major urban areas, including; Jaipur, Bikaner, Jodhpur, Ajmer, Kota, and Udaipur. Mott MacDonald was appointed for detailed designing of the project plan and for benefit monitoring and evaluation (BME) which is designed and implemented in such a manner so as ensure that an accurate assessment can be made of the overall impact of the

project interventions in terms of its coverage, adequacy, sustainability, usage and feasibility of the components taken up under the project.

The Project goal is to encourage sustainable economic growth in cities and tourist centers. Project envisages development of infrastructure services in various cities of Rajasthan i.e Jhalawar-Jhalarapatan, Bundi, Baran-Chhabra, Rajasamand and Chittorgarh (Rs. 500 crores) involving design and construction supervision of the works for the sectors like water supply, sewerage and drainage, solid waste management, city roads, bridges and Transport and heritage, medical fire fighting, tourism, covering population of 0.5 million.

KARNATAKA: Karnataka Urban Infra-structure Development project has been conceived with the single purpose of relieving the population concentration in Bangalore, one of the fastest growing metro city's in India. The strategy was to develop counter magnet towns and/ or potential expansion towns, which later become counter-magnets within a radius of 200km from Bangalore. The broad sectors of improvement are environmental sanitation

comprising of water supply, sewerage systems, storm water drains, solid waste management, road improvements encompassing detailed traffic management schemes, road rehabilitation/ widening, formation of new access roads and bridge rehabilitation, truck terminals, poverty alleviation providing basic infrastructure needs in the select slums, residential sites and industrial sites. The services included review of feasibility studies, preparing procurement packages, surveys and field investigations, conceptual and detailed engineering design, bid documentation and evaluation and construction supervision.

Bangalore in the state of Karnataka is home to a population of 4.5 million, which is expected to reach 7 million by 2011. Additional water supplies and sewerage are essential to help sustain the city's rapid commercial and industrial growth and improve the quality of life in poorer areas. BWSSB appointed Mott MacDonald lead consortium to engineer the expansion of the city's water supply and sewerage systems. The £230 million scheme, funded by Japan's Overseas Economic Co-operation Fund, will provide an additional 270,000m³/d of water and improve sewage collection and

treatment throughout the metropolitan area. Consultancy team at Bangalore was involved in reviewing preliminary designs, detailed design, and preparation of pre-qualification and tender documents. We also evaluated pre-qualification and tender submissions and were involved in construction supervision and project monitoring for various project components like strengthening of existing raw water abstraction and transfer system comprising of 10km long, 2000mm diameter raw water main, 27,000 cubic meters per day of water treatment plant, treated water pumping stations and service reservoirs. Sewage treatment plants of capacity ranging from 20-74 million liters per day and associated trunk sewers and pumping stations were also part of the project components.

UTTARANCHAL: In the 2001 the percentage of urban population to the total population in Uttaranchal was 25% while the national average for the same year was 28%. Though presently, Uttaranchal is trailing behind the national average in this respect of the degree of urbanization, its growth rate of urban population (33 %) in the 1991 to 2001 decade was more than one and half times the growth rate of

total population (19.2 %) in the same decade. Should this growth rate of urban population be maintained, Uttaranchal will soon catch up with the national average of the degree of urbanization. These growth rates demonstrate that whilst net in-migration is a contributing factor to urban population growth, natural increase was the dominant explanatory factor 1991-2001.

In line with expected trends in India, urbanization in Uttaranchal is expected to intensify over the coming decades. Despite slowing down of overall population growth, annual rates of increase in the urban areas are expected to be in excess of 3%. Over a twenty year period (2001-2021), taking even a very conservative average an annual rate of 2.5%, will lead to around two and half time increase in the present urban population of the State (2.18 million in 2001) by 2035 in absolute terms. The urban population is therefore likely to exceed 3.27 million by the end of the Project design year of 2035. The population of each of the five towns taken as priority towns for this TA has been projected separately up to the year 2035 under a set of assumptions based on the growth potentiality of each town.

DELHI: With a view to provide basic civic infrastructure in the industrial estates/areas, the Government of NCT of Delhi has formulated a scheme for up gradation /improvement of infrastructure in participation with the industries owners both in terms of financial contribution and also in decision making for such up gradation.

To begin with, the scheme will be confined to the following 9 industrial estates/ areas:-

- (1) Shahjada Bagh Industrial Area
- (2) Narela Industrial Complex
- (3) Industrial Complex at Rohtak Road of DSIDC
- (4) Rewari Line Industrial Area Phase – II (Blocks D-1, D-II, EF & WS
- (5) DDA sheds Okhla, Phase – I & II
- (6) Functional Industrial Estate, Patparganj
- (7) Ram Pura Industrial Area
- (8) Mohan Nagar Cooperative Industrial Estate, Block-A, Block-B-1 & 2

(9) SMA Cooperative Industrial Area t G.T.Karnal Road

Salient features of the Scheme are:-

(a) Scope of works to cover:

- (i) road service dressing;
- (ii) horticulture;
- (iii) storm water drain;
- (iv) water tanks;
- (v) water line;
- (vi) public toilets;
- (vii) sewage;
- (viii) disposal of melba;
- (ix) street lights and high mast lights; and
- (x) common facility centre

(b) 15% of the total expenditure to be incurred on the selected work shall be borne by the industrial association / society of the area on Bhagidari basis which is to be contributed before the work is allotted to the implementing agency.

(c) The industrial association/society of the area shall prioritize the work to be undertaken through the Land Management Agency and have the estimates prepared. Funds would be released in three installments, namely: -

i. 40% on allocation of work (this would include 15% contribution by the industrial association/society;

ii. 30% on award of the work to the contractor;

iii. 30% on completion of 70% of the work

(d) 85% of the total cost of the work shall be met out of the plan scheme of up gradation /improvement of civic services of industrial estates and 15% of the total cost shall be borne by the industrial Association of the area / Federation of Association/Society of the industrial estates/areas.

(e) In all/any of the industrial estates which have / has more than one industrial association, they should form a federation of the associations for identification and prioritization of up gradation work to be undertaken;

(f) 'Memorandum of Understanding' would be entered into with Department of Industries with each association/society, providing for post-up gradation/maintenance for each work.

(g) Associations of the Industrial Estate may explore feasible establishment for public/private partnership projects for up gradation of the industrial estate so that maintenance may be taken care on sustainable basis through levy of user fee.

Industrial Association/society of the areas/estates willing to participate in the Scheme may send formal request to Joint Commissioner of Industries (Land) Department indicating there in the services required for up gradation in order of priority.

4.5 Review of Ninth Plan Schemes: Centrally- Sponsored Accelerated urban water Supply Programme (AUWSP)

The Centrally sponsored Accelerated Urban Water Supply Programme was launched in 1993-94 during the Eighth Plan. It aims at providing water supply in towns with a population of less than 20,000 as per the 1991 census. A total

of 2151 towns qualify for consideration under the scheme. The project funding is shared equally by Centre and State, the latter including a 5 percent contribution from the beneficiary town. The Centre meets the entire cost in Union Territories. State-wise share in the Plan allocation is based on a weightage system based on population, incidence of poverty, etc. Priority has to be given for towns with special problems such as very low per capita supply, very distant or deep water source, drought-prone areas, areas with excess salinity, fluoride, iron content in water source and high incidence of water-borne diseases. The per capita unit cost is normally limited to Rs 1000, which can be relaxed if there is sufficient justification. Till 15th March 2002, schemes have been approved in 654 towns with an estimated cost of Rs 817.70 crore. Of this 223 schemes at an estimated cost of Rs 212.01 crore were approved during the Eighth Plan. A total of Rs 337.37 crore has been released by Government of India, of which Rs 68.624 crore were released in the Eighth Plan. The State Governments have released an amount of Rs 244.1 crore towards their share. The expenditure reported is Rs 390.33 crore. A total of 240 projects under the AUWSP are reported to have been completed. Both sanctions and project

completion have fallen short of the targets. The average time taken from sanction to completion is about two to three years. Insufficient flow of project funds from the State Governments, land acquisition delays, and inadequacies in project management in some of the executing agencies have been responsible for the delay in project execution, resulting in a large number of schemes being carried over into the 10th Plan. Out of 240 completed projects, 98 are in the State of Uttar Pradesh. Other States which have made substantial progress in completed projects are Madhya Pradesh (30), Tamil Nadu (25), Rajasthan (15), Maharashtra (12), Karnataka (8), Chattisgarh (9), Punjab (8), Gujarat (6), Orissa (6), and Manipur (5), and Himachal Pradesh (5). Haryana has completed four projects, West Bengal three, and Goa and Mizoram two each. In the States of Jammu & Kashmir, and Nagaland, one project each has been completed.

4.6 Conclusion:

Many states in India are now inviting private sector participation in the provision of infrastructure services on a more cost – effective basis – e.g., contracting out the management of urban services such as construction and

maintenance of toilets garbage collection and disposal, solid waste conversion and maintenance of water supply systems, etc, BOT franchises and the provision of services through voluntary organizations, community organizations and common interest groups.

The current urban population of about 285 million is expected to be more than double (550 million) over the next 20 years, an average addition of more than 14 million new urban residents every year. In absolute terms, an urban population of more than half a billion is a daunting challenge. It is a difficult riddle to solve, not an impossible one. And the way to do so is to look at the problem afresh and adopt a few radical ideas that look at long-term solutions than harp on immediate gains. The Government of India is designing and implementing various policies for the solution of these problems and for the development of urban cities in India.

5.1 Introduction:

Urban, city, and town planning integrates land use planning and transportation planning to improve the built, economic and social environments of communities. Regional planning deals with a still larger environment, at a less detailed level. Urban planning can include urban renewal, by adapting urban planning methods to existing cities suffering from decay and lack of investment.

Sustainable development and sustainability influence today's urban planners. Some planners argue that modern lifestyles use too many natural resources, polluting or destroying ecosystems, increasing social inequality, creating urban heat islands, and causing climate change. Many urban planners, therefore, advocate sustainable cities.

However, sustainable development is a recent, controversial concept. Wheeler, in his 1998 article, defines sustainable urban development as development that improves the long-term social and ecological health of cities and towns. He sketches a 'sustainable' city's features: compact, efficient land use; less automobile use, yet better access; efficient resource use; less pollution and waste; the

restoration of natural systems; good housing and living environments; a healthy social ecology; a sustainable economy; community participation and involvement; and preservation of local culture and wisdom.

Because of political and governance structures in most jurisdictions, sustainable planning measures must be widely supported before they can affect institutions and regions. Actual implementation is often a complex compromise.

Planners can help manage the growth of cities, applying tools like zoning and growth management to manage the uses of land. Historically, many of the cities now thought the most beautiful are the result of dense, long lasting systems of prohibitions and guidance about building sizes, uses and features. These allowed substantial freedoms, yet enforce styles, safety, and often materials in practical ways. Many conventional planning techniques are being repackaged using the contemporary term smart growth. There are some cities that have been planned from conception, and while the results often don't turn out quite as planned, evidence of the initial plan often remains.

The 74th Amendment Act provides for three types of municipal authorities: Nagar Panchayats for transitional areas (in transition from rural to urban), Municipal Councils for smaller towns and Municipal Corporations for larger urban areas (Article 243Q). The Act inserted the Twelfth Schedule (Article 243W) to the Constitution of India providing for an illustrative list of legitimate municipal functions. These functions include:

- Urban planning including town planning;
- Regulation of land-use and construction of buildings;
- Planning for economic and social development;
- Roads and bridges;
- Water supply for domestic, industrial and commercial purposes;
- Public health, sanitation, conservancy and solid waste management;
- Fire services;
- Urban forestry, protection of the environment and promotion of ecological aspects;
- Safeguarding the interests of weaker sections of society, including the handicapped and the mentally retarded;

- Slum improvement and up gradation;
- Urban poverty alleviation;
- Provision of urban amenities and facilities such as parks, gardens, playgrounds;
- Promotion of cultural, educational and aesthetic aspects;
- Burials and burial grounds; cremations, cremation Ghats/grounds and electric crematoria;
- Cattle pounds; prevention of cruelty to animals;
- Vital statistics including registration of births and deaths;
- Public amenities including street lighting, parking lots, bus stops and public conveniences;
- Regulation of slaughter houses and tanneries.

AN ANALYSIS OF AIZAWL CITY:

The city of Aizawl has a population of 404054 according to 2011 census. Three localities namely, Zarkawt Vaivakawn, and Kulikawn are randomly selected and named as locality I, II, and III accordingly. A total of 123 questionnaires were distributed in these localities. Questionnaires were distributed to one percent of the total

population of each locality, 30 in locality I, 40 in locality II and 53 in locality III respectively.

There are many contributing factors to the growth of urbanization and the factors such as job opportunities, education, urban lifestyle, healthcare facilities are randomly selected as shown in table 5.1 below.

Table 5.1 Factors Contributing to Urbanization in Aizawl City

SI No.	Factors	Locality - I	Locality –II	Locality - III
1	Job Opportunities	24	34	37
2	Education	3	2	12
3	Urban Lifestyle	3	3	3
4	Healthcare Facilities	0	1	1
5	Any Other Reasons	0	0	0

Source: Field Survey

In locality I, out of the total 30 respondents 24 stated that the main factor contributing to urbanization is job opportunities. There are a few that says that education and desire to live an urban lifestyle is also an important factors contributing to urbanization of Aizawl city. In locality II, out of 40 respondents, 34 are of the view that job opportunities are the main factor that contributes to urbanization. Education, urban lifestyle and healthcare facilities are

also considered as important factors. In locality III, out of the total 53 respondents, 37 are of the view that job opportunities are the main factor that leads to migration in urban areas. Education is viewed as the second contributing factor. Healthcare and urban lifestyles are also other reasons for migration to the urban areas. Therefore, it can be concluded that of all the contributing factors that led to growth of Aizawl city, job opportunities are the main reason.

Analysis was also done to understand the major impact of urbanization in Aizawl city. The main factors considered as the result of urbanization are inflation, land encroachment, sanitation problems, inadequate local transportation facilities and inadequacy of water, electricity and LPG supplies. When there is an increase in population, the basic urban quality of life such as access to water supply, electricity etc are not adequate for all, and to understand what are the main factors cause by growth of Aizawl city a question was posed to the respondents and the following table 5.2 highlighted their responses.

Table 5.2 Negative Impact of Urbanization in Aizawl City

SI No	Factors	Locality – I	Locality – II	Locality - III
1	Inflation	2	3	
2	Land Encroachment	4	4	6
3	Inadequate supply of Water, Electricity, LPG,etc	9	20	28
4	Local Transportation	2	3	8
5	Sanitation problems	9	8	8
6	Any Other Reasons	3	7	3

Source: Field Survey

As seen in the table 5.2 in locality I the main negative impact of urbanization of Aizawl city is inadequate supply of water, electricity and LPG which is also true for locality II and locality III. The second important factor is that growth of Aizawl city creates sanitation problems, where and how to dispose wastages etc. Shortage of land for construction of houses is another negative impact. From the primary data analysis it can be seen that urbanization also leads to inadequate local transportation facilities which is one of the basic urban quality of life.

The respondents also stated that there are other factors that are negatively responding with the process of urbanization. Job opportunities become lesser which cause an increase in the number

of people living below subsistence level. One interesting factor which is mentioned as the result of increase in population is crime and violence. As more and more people are migrating to Aizawl city the crime and violence report is higher as compared to the earlier days. Another reason is that there is less availability of houses to let, which cause an increase in house rent in the city.

Civic Infrastructure facilities include road connectivity in the city, which is another important factor for development. In Aizawl city the Public Work Department (PWD) of the state government is constructing the roads in all localities but whether these roads are well maintained or not is the question. If road connectivity is not satisfactory it has an adverse effect on the economy, the agriculturists and the producers faced marketing problems for their products. Therefore, the following table 5.3 shows whether road connectivity is satisfactory or not satisfactory in Aizawl city.

Table 5.3 Roads Connectivity in Aizawl City

SI No		Locality – I	Locality – II	Locality - III
1	Satisfactory	18	5	19
2	Not Satisfactory	10	35	32

Source: Field Survey

In locality I the road connectivity in the area is satisfactory; they are well maintained by the PWD of the state government.

Locality II data shows that road connectivity is far from satisfactory, there are no proper black topped road in their locality, the existing ones are not properly maintained by the authority. In locality III, the road conditions are not satisfactory. More than 96% of the respondents are reporting that the road connectivity in Aizawl city as a whole is far for satisfactory. Much have to be done form the government side to make necessary improvement on the infrastructure, especially road connectivity in Aizawl city.

Health:

Availability of primary health care facilities such as sub centers is an important component of civic infrastructure facilities. The State Government aims at improving health facility for all the people. Mizoram Health Department has been doing phenomenal work ever since the days of the British Raj when the army set up a few dispensaries in the regions near the Lushai hills. The concept of decentralized planning has already been touched upon in the framework of implementation. The subject would be elaborated in somewhat greater detail here. The disease control programmes are run in a vertical manner. As a result, the funds flow to the states is in a tied manner hampering flexibility. Verticality of the programmes has also led to duplication of efforts and thereby wastage of scarce

resources. The need for horizontal integration of these schemes has been repeatedly emphasized in various reports.

One of the biggest challenges for the success of the Health department is to establish accountable and effective implementation arrangements through National Rural Health Mission. Clarity regarding tasks, teams, roles, functions, powers at all levels of the system will facilitate effective action.

In many States, Public Health is given high priority and even made a separate Directorate. In Mizoram, it occupies a small section with one dealing assistant and a junior level Programme Officer; they functioned from Health Directorate in Aizawl City.

Presently, there is no clear cut streamlining of functions and responsibilities of this section. However, this section previously catered to disaster and epidemic management, research projects, PFA programme, Food and Water safety programmes, zoonotic diseases, non-communicable diseases, Indian System of Medicine & Homeopathy (now known as AYUSH) and all other areas for which there are no specifically designed health programmes and conducting training programmes for various health problems. It can be stated that many health programmes had their origin from this

small section. It may be noted that many health problems in Mizoram are not addressed by the existing health programmes.

A few recent and notable achievements/ activities/ contributions of this section are listed below:-

(a) A Conducted most outbreak investigations & control activities before the implementation of Integrated Disease Surveillance Project (IDSP).

(b) Implemented National Surveillance Programme for Communicable Diseases (NSPCD) as pilot in Aizawl District.

(c) Prepared policy documents like Mizoram Population Policy & Mizoram Health Policy, 2003.

(d) Coordinated and conducted Multi-centric Study on Hepatitis B in Mizoram in 1999.

(e) Coordinated and completed 3 years ICMR Project on HIV/AIDS and Drug Abuse in Mizoram during 2004-06.

(f) Coordinated and planned Medical Services for the new Lengpui Airport.

(g) Coordinated a multi-department (Health, LAD, PHE & Tourism) Food Survey in Aizawl.

(h) Prepared proposal and successfully negotiated NABARD loan of Rs.5.6 Crores for CT Scan at CH(A), building of Sialhawk SHC & 10 sub-centers.

(i) Coordinated and implemented Health Department BAFFACOS Project 2004-09.

(j) Revived PFA Programme and recruited two Food Inspectors, posts of which were vacant for more than 10 years.

(k) Initiated sensitization activities for Public Health Emergencies of International Concern (PHEIC) like SARS (2003), Plague(2004), Avian Influenza(2005).

(l) Represented Health Department in State Level Committees on Rodent Control, Bird Flu, Food & Water Safety, etc.

(m) Participated as Resource Person in various training programmes on HIV/AIDS, Disease Surveillance, Epidemic Management, Food & Water Safety, Disaster Management, Health Policy, Health & Hospital Administration, Management, Sex

Education, Cancer Prevention, Anti-Tobacco campaigns, Avian Flu, Rodent Borne Diseases, Emerging & Re-emerging Diseases, etc.

Every locality in Aizawl has health sub centers and the government efforts in maintaining these sub centers is a notable achievement. Awareness campaign and training on Avian Influenza was organized exclusively for doctors at Civil Hospital, Aizawl. Currently the state has a hospital in Aizawl, the state's capital city. The Civil Hospital, Aizawl is one of the premier hospitals in the city and is endowed with more than 300 beds. The inter-denominational medical institute is under the jurisdiction of the Health and Family Welfare Department of the Government of Mizoram. The multi specialty hospital has an efficient out-patient department.

The Mizoram Health Care Scheme, a health insurance scheme, was implemented in April 2008. It is aimed at improving access of families to quality medical care for treatment of diseases involving hospitalization and surgery through an empanelled network of healthcare providers. The scheme covers 150,000 families, all bonafide residents of Mizoram, except Government and Public Sector employees and their dependents. Benefits covered relate to medical expenses incurred on hospitalization in hospitals both within and outside the State.

Government of Mizoram established the Mizoram State Health Care Society as the project implementation agency for the scheme. Through a process of selection that involved bidding by national level insurance companies based on a published Request for Proposal (RFP), Reliance General Insurance Company was chosen to provide the coverage.

The Mizoram Health Insurance Scheme, a universal coverage, hospitalization expenses scheme stands out for its good features in comparison to other similar state sponsored schemes, both with reference to the coverage amount as well as benefits covered. Its coverage of pre-existing conditions and ailments, maternity and no age restrictions for eligibility, adds to its appeal.

Health insurance being a complex subject and a highly specialized activity, implementation of a large health insurance scheme of the magnitude of Mizoram Health Care Scheme requires technical knowledge and skills pertaining to health insurance management and accounting, underwriting, claims adjustment and insurance regulations. Deficiency of these skills is bound to impact effective implementation of the scheme. It is critical that a capacity building plan is developed and implemented without delay to ensure successful operation of the scheme.

Street Lights in Aizawl City

One major component of civic infrastructure facilities is the availability of street lights and its maintenance by the state government. Only in Locality I the street lights are maintained properly by the authorities. In the other localities, street lights are quite few in numbers and they are not properly functioning. It has been observed that in the city centers and crowded areas the street lights are functioning properly but in the outskirts of the city and less inhabited areas the street lights are not working properly. The respondents suggested that the state government should look into the matter more seriously.

Supply of Water, Electricity and Liquid Petroleum Gas (LPG) in Aizawl City

Water supply, electricity, LPG etc are the basic needs of every urban dwellers. In Aizawl city there is a scarcity of water supply, the distribution is uneven in the sense that the first class citizens are abundantly supplied with this facility but the other classes never received a satisfactory supply of water. Supply of water to consumers should normally be based on the principle of effective demand that should broadly correspond to the standard of service which the users as a community are willing to maintain, operate and

finance. At the same time, special provisions should be made to meet the needs of the poor who have less capacity to pay. The focus should not only be on the investment requirements to augment supplies or install additional systems in sanitation and water supply. Instead, greater attention must be paid to the critical issues of institutional restructuring, managerial improvement, better and more equitable service to citizens who must have a greater degree of participation. This is also true for the supply of electricity in Aizawl city; there are some localities that are well supplied while in the major part of the city the supply is distributed. The main reason cited by the respondents is that the ruling government is not doing the things that need to be done in this respect. LPG distribution also needs to be taken care of; there are some localities that are receiving LPG regularly while the other localities are facing a serious problem. Many families have to purchase it from the black market by paying doubled of the original price.

Water supply and sanitation works are generally executed by the state public health engineering division which is a Department of the State Government, or a state- level Board or Corporation dealing exclusively with water/ sanitation or infrastructure in general. Though water supply and sanitation are essentially municipal functions to be discharged by the urban local bodies, these bodies are unable to

take any significant initiative because of their weak financial position. As a result action is rarely taken to augment supplies or effect improvements when they are most needed. The unfinished tasks in water supply in urban areas may be summed up as augmentation to reach the prescribed norms, higher degree of reliability, assurance of water quality, a high standard of operation and management, accountability to customers and in particular special arrangements to meet the needs of the urban poor, and levy and recovery of user charges to finance the maintenance functions as well as facilitate further investment in the sector. The achievement of these tasks depends to a large on the willingness of the State Governments and urban local bodies to make restructure water supply organizations, levy reasonable water rates, take up reforms in billing, accounting and collection, and become credit-worthy in order to have access to market funding.

Air pollution in Aizawl City

Pollution of air is one major negative impact of growth of cities and towns. It is considered as one component of civic infrastructure which needs to be taken care of by the government. The government should try to reduce pollution of cities by implementing policies and strictly following their policies.

Air pollution is the introduction of chemicals, particulate matter, or biological materials that cause harm or discomfort to humans or other living organisms, or cause damage to the natural environment or built environment, into the atmosphere. The atmosphere is a complex dynamic natural gaseous system that is essential to support life on planet Earth. Stratospheric ozone depletion due to air pollution has long been recognized as a threat to human health as well as to the Earth's ecosystems. Indoor air pollution and urban air quality are listed as two of the world's worst pollution problems in the 2008 Blacksmith Institute World's Worst Polluted Places report. Pollutants can be classified as primary or secondary. Usually, primary pollutants are directly emitted from a process, such as ash from a volcanic eruption, the carbon monoxide gas from a motor vehicle exhaust or sulfur dioxide released from factories. Secondary pollutants are not emitted directly. Rather, they form in the air when primary pollutants react or interact. An important example of a secondary pollutant is ground level ozone — one of the many secondary pollutants that make up photochemical smog. Some pollutants may be both primary and secondary: that is, they are both emitted directly and formed from other primary pollutants.

The following table 5.4 shows the main factors contributing to pollution of air in Aizawl city.

Table 5.4 Contributing Factors of Air Pollution

SI No	Factors	Locality - I	Locality -II	Locality - III
1	Population Growth	-	5	7
2	Vehicles	19	11	16
3	Deforestation	11	7	11
4	Wastage of Industries	-	1	3
5	Lack of Sanitation Facilities	7	16	16

Source: Field survey

There are many factors that contributes to the pollution of air and some factors are randomly selected for the study they are, population growth, increase in the number of vehicles, deforestation, wastage of industries and lack of sanitation facilities. In locality I, out of the five factors, increase in the number of vehicles is given as the major factor contributing to pollution of air in Aizawl city. Deforestation is the second important factor mainly because cutting of trees coupled with increase in the number of vehicles pollutes the air. Importance is also given on the lack of sanitation facilities in the city. In locality II, lack of sanitation facilities is given as the main factor for air pollution, increase in the number of vehicles is the

second important factor and deforestation occupies the third factor as seen in the table. In locality III, lack of sanitation facilities and increase in the number of vehicles are given equal importance as factors contributing to air pollution in Aizawl city. Deforestation is another important factor contributing to air pollution in the city. Increase in the number of vehicles is also considered as an important factor and there are a few who are of the opinion that increase in population is a contributing factor to air pollution in Aizawl city. Therefore, from the analysis of primary data it can be said that increase in the number of vehicles is the main contributing factor to the pollution of air in Aizawl city.

Availability of Proper Drainage System in Aizawl City

Drainage is the disposal of excess water on land (either used or in form of storm water). It must be distinguished from flood control which is the prevention of damage as a result of overflow from river. There are two type of system adopted for waste water collection. Separate sanitary and combined system. In separate sanitary system, there is a separate sewer that collects the household, commercial and industrial waste water and disposes them while a separate sewer collects the storm water and disposes it separately.

In the combined system, both the storm water and domestic water are conveyed through the same pipe network.

Sanitary sewers should have a self cleansing velocity of (.6-1 m/s). This self cleansing velocity is achieved by laying the drain on a steep slope. Manholes should be placed at interval of 100-120m for the purpose of maintaining and servicing of the sewer. It should be noted that waste water in the sewer are usually transported by gravitational force rather than mechanical means (pumping) for convenient sake. This is why in laying sewer pipes; the topography of the area should be well understood.

The overall steps in layout sewers include:

- Establish comprehensive map of the area including road contour, topography and utilities.
- Drains are shown with a single line with arrows for direction.
- Manholes are shown with a dot at all its necessary locations as the junctions and its intermediate point of 100-120m interval.
- Sewers are design to follow natural topography.
- Sewers are mostly branch network.
- Sewers or drains are usually located along the road.
- Design approach for sewers is as follows;

- Estimate manning constant and select slope.
- Compute the section factor.
- Get the best hydraulic section either rectangle or trapezoid.
- Check the satisfaction of minimum velocity.
- Addition of adequate freeboard to avoid overflowing.

The disposal of the waste water could be treated or not treated. However, the treatment is usually by biological method. The disposal of waste water is of immense important for economic growth. The treated or untreated waste could be used as a source of irrigation, supplement stream or river flow and could be used as a source of recharge for ground water.

It is obvious in the cities of the developing countries that the most of construction industries do not take note of all the above mentioned process. As a result storm water follows drains that are not specified for them or overflows the drains there by causing erosions. On the other hand, some of the storm water are stagnant in the drains there by becoming a breeding place for mosquitoes and toads. This could result in increase of malaria and water related disease in the vicinity. All this is because; most government in such cities have not yet understand the important of drainage systems and the role it plays in social- economic development.

Having a proper drainage system is one basic requirement of urbanization. Lack of this facility is a threat to the society. Mizoram as a whole lacks this facility and much had been said but nothing is done for its improvement. In order to know whether the existing drainage system in Aizawl is satisfactory or not satisfactory the following table 5.5 is given.

Table 5.5 Availability of Proper Drainage System

SI No		Locality – I	Locality – II	Locality - III
1	Satisfactory	6		10
2	Not Satisfactory	24	40	43

Source: Field Survey

This table shows that more than 86% of the respondents said that the drainage systems are not satisfactory in Aizawl city. This is also true from general observation by the researcher. The state government is taking no effort at present to make a proper drainage system in the city. During rainy season especially, the city is flooded with not only rain water but wastage of each house and there is a huge problem of water logging due to unavailability of drainage system. Every respondent suggested that the government should take immediate steps towards the solution of this problem.

A question was also posed to the respondents of how they dispose their wastage. In Aizawl city the Urban Development and Poverty Alleviation (UD&AP) gives funds to the Local Council for collection of garbage and wastages. 10% of the total expense should be covered by contribution from each family of the locality. The following table 5.6 shows the way the respondents disposed off their wastage and garbage.

Table 5.6 Methods of Disposing Wastages and Garbage

SI No.		Locality – I	Locality – II	Locality - III
1	Local Council Sanitation Vehicle	30	33	52
2	Wherever Available	0	2	0
3	Owned land for dispose	0	5	1

Source: Field Survey

Almost every respondent from each locality disposed their wastages by making use of the local council sanitation vehicles that goes to each locality not less than twice a week. The Aizawl Municipal Council is performing very well in keeping the city clean.

This chapter shows that the civic infrastructure facilities in Aizawl city are far from satisfactory. Road connectivity, transport and communication, supply of electricity, water and LPG are the major problems faced by the urban residents of Aizawl. The increasing immigration also reduced the availability of jobs, house rent

increases, price of land is mounting and therefore there is an urgent need of the government to implement new policies and to monitor the existing policies for the welfare of its citizens.

MAIN FINDINGS, SUGGESTED MEASURES AND CONCLUSION

The following are the main findings and suggested measures for urbanization and development of civic infrastructure facilities in Aizawl City.

- Better job opportunities are the main reason that led people migrate to Aizawl city.
- The main negative impact of urbanization of Aizawl city is inadequate supply of water, electricity and LPG.
- Urbanization of Aizawl also leads to inadequate local transportation facilities which are one of the basic urban quality of life.
- More than 96% of the respondents are reporting that the road connectivity in Aizawl city as a whole is far for satisfactory.
- From the analysis of primary data it can be concluded that increase in the number of vehicles is the main contributing factor to the pollution of air in Aizawl city.
- There is lack of proper drainage system in Aizawl city. The state government is taking no effort at present to make a proper drainage system in the city.

- Almost every respondent from each locality disposed their wastages by making use of the local council sanitation vehicles that goes to each locality not less than twice a week. The Aizawl Municipal Council is performing very well in keeping the city clean.
- There are no constructive proposals/plans for improving the quality of living of the urban poor in Aizawl city. Issues and needs of the urban poor should be addressed in a holistic way and facilities should be planned based on their requirements.
- Strategies or improvements suggested by the State Government are not based on the realistic evaluation of the existing infrastructure facilities. Therefore it is suggested that Issues on infrastructure facilities should be assessed on an informed real-time basis and strategies should be taken forward based on this assessment
- Traffic Management measures are more biased towards motorized traffic and safety of pedestrians are ignored. Pedestrians should necessarily be given a place in the traffic and transportation plan.
- Plan ignores critical measures needed to ensure sustainable water supply within the city. It is therefore

suggested that water supply shortages should be recorded and a rational plan to overcome the inadequacies should be proposed.

- Inadequacies in facilities like education and health have been overcome by adding such new facilities without considering the spatial location. Therefore, it is suggested that provisions of new education and healthcare facilities should be determined based on data and analysis of the need, impact, and accessibility of these services.
- There is no link between the objectives of preservation of open spaces and protection of ecologically sensitive areas. The ecologically sensitive areas should be earmarked and zoned as protected areas. Parks and playgrounds should not be privatized nor be converted into built up areas.
- There are no clear statements as to how the state's plans and policies for development of Mizoram dovetail into the Aizawl Municipal Council (AMC) Master Plan. Schemes for development that are currently on-going (e.g. JNNURM and others) and the master plan proposals have not been tied up clearly. A comprehensive plan for the poor should

be prepared. Relocation plans for the urban poor must be considered as a service not as a project.

- The solution to water supply problem is often seen as capacity addition, rather than operating the existing capacity more efficiently. This bias in favor of new projects is partly on account of the lack of accountability on the part of the agencies at both local and the State levels, because inefficient management of schemes goes un-noticed. Efficient operation of existing water supply schemes is the critical first step in any move to make the schemes operate in a viable fashion, by increasing availability, improving reliability and customer service, and reducing cost. While additional schemes will augment availability, it will not improve either the viability of the schemes, or lead to greater customer satisfaction as the quality of service will remain the same. Since the low quality of service is the single biggest obstacle to the levy of reasonable user charges, efficient operation will also help improve acceptability of higher user charges.

CONCLUSION:

Urbanization is an important ingredient of economic development. The trend towards greater urbanization is observed across the developing world. Going by this trend, India is slated to have 50 per cent of its population living in cities and towns in the next few decades, up from the current proportion of about 30 per cent. Although India's urban population has been growing, the level and pace of urbanization have been low in comparison with other developed and developing countries. After liberalization of the economy, India made strides in economic growth; a large part of it has been through the contribution of urban areas.

Globalization has been resulting in further concentration of economic activities in cities, in a manner that leads to cost reduction and increasing competitiveness. Cities offer distinct advantages of economies of scale, scope and agglomeration and returns to sharing of infrastructure and public services. The rising economic importance of cities is evident from their contribution to the nation's Gross Domestic Product (GDP), which is reportedly more than 50 per cent. Given the strategic importance of cities, provision of civic infrastructure services

has assumed critical importance socially, economically and politically. While the expectations from the public are rising, the fragility of civic infrastructure and services has been exposed during the floods in some of the major Indian cities recently.

The exogenous factors are essentially those factors over which the Municipal council (MCs) does not have any control. The delegation of revenue powers and grants (inter-governmental transfers), which determine the resources of the local bodies, are the key exogenous factors influencing the ability of the MC to spend and provide these services. These factors can be captured in the form of 'dependency ratio' and 'decentralization ratio'. Dependency ratio is defined as the share of grants a MC receives in relation to its total expenditure. Decentralization ratio refers to the proportion of the MC's per capita revenue to State per capita revenue receipt.

Decentralization increases efficiency of the lower levels of Government in the provision of various local services due to their limited jurisdiction and better matching of resources, services and preferences. An increase in decentralization is

expected to delegate more powers to local government authorities and augment their capacity to mobilize resources. Dependency of local government on the upper tiers of Government arises from the support extended to them in the form of grants, which arise largely out of vertical mismatches between functions and finance, as well as out of the compulsions necessitated by horizontal disparities between different jurisdictions. However, greater dependency on the upper tiers renders the local governments vulnerable regarding spending on the provision of basic infrastructure and services. This adversely affects the performance of the local governments.

It is apparent from the analysis that there is a need to substantially increase the spending by urban local bodies. Given the constraints faced by State Governments, it is essential that the MCs be granted access to borrowed funds. At least there are two convincing arguments in favor of MCs going for borrowed funds. First, there is a scope for MCs to go in for borrowed funds as their current level of indebtedness is not very large. Secondly, there is a scope to raise user charges which are abysmally low across the States.

Enhancement of user charges would make the new projects undertaken with borrowed funds economically viable and ensure that MCs are debt-sustainable.

There is a need for certain lines of reforms to restructure the system of municipal finances in the country by revisiting expenditure assignment and revenue assignment, finding an alternative to Octroi, developing national consensus on a Municipal Finance Schedule, careful matching of revenues and expenditures based on Bahl-Linn principles, raising local revenue efforts, reforming property tax, using urban land as a resource, adopting 'users pay', 'beneficiaries pay' and 'polluters pay' principles, linking individual services with user charges and collective services with benefit taxes, restructuring inter-governmental transfers with a simple distributive formula that gives due weights to needs, rights to minimum basic services

It is integral that localities must be encourage to interact and cooperate as they all have a "right to the city". It is also necessary that the present ministry or ministries should closely monitor and maintain the existing infrastructure facilities in Aizawl city for the benefit of urban dwellers.

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