CHAPTER 1

Introduction

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Introduction

The term urbanization is used in a variety of ways, and in wide ranging contexts. It is sometimes used to describe a growing importance of industries and services within an emerging economy. It is sometimes also employed with a sociological focus referring to the development of urban social networks, or peculiar patterns of social interaction that are said to exist in urban life. Again, some will prefer a normative view and characterize urbanization as a set of value, attitude and belief that comprise a 'modern' western perspective on the world, while other will opt for describing urbanization as a process characterized by increasing heterogeneity through increased structural complexity and concomitant differentials of functions. Demographer tend to prefer more prosaic definitions and are, for the most part satisfied with defining the term as the process whereby the balance of a population shifts from residence in rural to urban location (Lasuen, 1971).

Roy (1986) has rightly remarked that demographers, economists, and geographers define urbanization with specific view-points, and use the concept in their own way. Demographers usually tend to see urbanization as a process of accretion of population in urban areas which ultimately get manifested in increasing share of population residing in urban areas. Economists usually try to relate population growth, pattern of demand and technology with the process of urbanization. Geographers take a very comprehensive view of the term urbanization. According to them urbanization refers to the process of spatial reorganization whereby there is a growing concentration of population in urban centers along with vertical shift in workforce structure. On occasions, jurisdiction and morphogenesis of town also occupy central position when a geographer analyses the process of urbanization.

In yet other, the term urbanization has throughout been used to signify an increasing concentration of people in cities (Premi, 1991). The growth of urban centers leads to urbanization, and the presence of city means the presence of urbanization (Reiss, 1954). This process of transformation of the society from a predominantly rural to urban or the transformation from traditional rural economy to
modern industrial one is known as urbanization (Despande and Bhat, 1980). It is an inevitable consequence of country’s economic and technological development (Tripathi, 2005).

The Canadian Encyclopaedia depicts urbanization as a result of a complex process involving many variables – economic, technological, demographic, political, environmental etc. According to it, urbanization is inevitably accompanied by other changes in society (www.thecandianencyclopedi.com). The Wikipedia Encyclopaedia defines urbanization as removal of the rural characteristics of an area, a process associated with the development of civilization and technology (http://wikipedia.org). Demographically the term denotes redistribution of population from rural to urban settlements. The Britannica Encyclopaedia defines, urbanization as the process by which large number of people are permanently concentrated in relative small area, forming cities (www.britannica.com). The American Heritage Dictionary argues that urbanization is the social processes whereby cities grow and societies become more urban (The American Heritage Dictionary, 2000). The Word Reference Dictionary opines that urbanization is the process where by a society changes from rural to an urban way of life. It refers also to the gradual increase in the proportion of people living in urban areas (www.wordreference.com). According the Glossary of Statistical terms, urbanization refers to: first, an increase in the proportion of a population living in urban areas; second, the process by which a large number of people become permanently concentrated in relatively small areas, forming cities (www.stat.oecd.org). Similarly, the Sci–tech Dictionary refer urbanization as the process where by a society is transformed from an essentially rural one to a predominantly urban one. The most visible expression of the process of urbanisation on the landscape is growth of cities and increase in its number and importance (Sci-Tech Dictionary, 2003).

From the above discussion and on the basis of the review of existing literature it is apparent that defining the term ‘urbanization’ is not a straight forward exercise. However, it is ideal to state that urbanization is a ‘process of change’ which may be either sociological, or physical or economic or demographic or a combination of all.

This ambiguity in the concept poses a problem for a researcher involved in the study of urbanization especially in Indian context. Bose (1970) has rightly remarked that it is better to deal with Indian urbanization on the basis of demographic criteria. In terms of demographic criteria; urbanization is interpreted as a process involving the
absolute and relative growth of towns and cities within a defined area. Fundamentally, the process of urbanization refers to an increase in the proportion of total population that resides in the urban locations (Harris, 1997).

However, the problem doesn’t end here. One faces a serious difficulty in providing a universal definition of what is an urban area. There is no unanimity regarding what demographic criteria should be adopted to define the term ‘urban’ because the term ‘urban’ is defined differently in different countries. While on the one hand, in Greenland, for instance a place with 300 or more inhabitants is called urban, on the other, in Korea, an urban area must have at least 40,000 inhabitants. Even in the same country, there are frequent modifications in the definition of ‘urban’ which call for numerous adjustments to attain comparability. India is also not an exception to this problem of ambiguity. The census definition of ‘Urban’ has undergone change from time to time. Almost up to 1951 the definition of urban area remained unchanged. But in 1961, several modifications were introduced in the concept of urban areas to make it more satisfying from the demographic or statistical point of view.

According to the census of India 1901, the term ‘urban’ as given in the imperial census code relates to:

i) Municipality of whatever size.
ii) All civil lines not included within municipal limits;
iii) Even other continuous collection of houses, permanently inhabited by no less than 5000 persons, which the provincial superintendent may decide to treat as a town for census purpose

Evidently, in the above definition administrative setup and size was the basic consideration for deciding the status of any settlement as ‘urban’ or ‘rural’ and not necessarily the economic parameters. Many of the places, which had thus been treated as urban were in reality nothing other than overgrown villages. The above mentioned definition of urban continued up to the 1951 census. Ashok Mitra, the then Census Commissioner, suggested a more realistic and meaningful definition of urban centers in 1961 (Census of India, 1961). The modification primarily suggested to avoid the anomalies, in the previous definition. According to the revised definition an urban place was needed to fulfil the following criteria:

i) Density of not less than 1000 person per sq mile.
ii) A population of 5000
iii) 75 percent of the male working populations engaged in non-agricultural activities, and
iv) certain urban characteristics such as industrial area, area of tourist importance.

In addition, the marginal case such as project colonies, area of intensive industrial development, railway colonies, important tourist centre etc. come in the category of ‘Urban’. Apart from these the outgrowths of cities and town have also been treated as urban. It may be noticed from the above, that in India, there are two distinct types of urban units.

i) The place which has come into existence by virtue of statutory notification and are referred to as municipal corporations, municipal board, cantonment board, notified area committee etc.

ii) The places which are defined as urban because they satisfy demographic criteria. They are referred to as census towns or non-municipal towns. (Census of India, 2001)

Origin and Growth of Urbanization

The process of urbanization has a long history. It originated during the pre-historic period when men started domestication of plants and animals around 10,000 year ago. The cultivation of plants and domestications of animals enabled men to live in permanent settlements. There are evidences that show the development of permanent settlement in Egypt, Mesopotamia, Indus valley, China and Central America. In all these cases, peasant communities eventually gave rise to urban communities and urban settlements (Mumford, 1934).

The main reason underlying the development of urban settlements was the emergence of the practice of improved plant cultivation and stock breeding that came with the Neolithic culture (Childe, 1942). In particular, the cultivation of the hard grains that were produced in abundance and were in surplus supported a large and growing population. Surplus production helped man escape from the hardship of subsistence economy. This change led to growth in number of people involved in pursuits other than agriculture. Thus other professions like administration, the mechanical art, warfare etc got increasing prominence. This was the initial stage of the urbanization process.
During the subsequent phases the process has been closely connected with the rise and fall of kingdom, dynasties and empires. The process of urbanization thus became a political process.

However the term urbanization as we understand today has its root in industrial revolution that occurred about 200 year ago in Europe. The industrial revolution gave powerful impetus to the growth of cities. Subsequently, many capital cities grew at an unprecedented pace. In 1800, there was not a single million city in Europe, though London had a population of 0.95 million and Paris 0.50 million. By 1850, however Paris had passed the one million mark while London was the home of 2 million people.

In England, Wales and Germany the majority of the population was urban by 1900 AD. At the same time many other European countries including France and Sweden were in close proximity to this distinction with 50 percent of their population as urban (Shalter and Hobb, 2003).

Similarly urbanization in USA, Canada, Australia and in Latin American countries also started after the industrial revolution, and these countries became predominantly urban soon after 1900 AD (Tripathi, 2005). By the first national Census of the United States in 1790, the urban population was below 5 million, which accounted for only 5 percent of the total population in the country. The largest city was Philadelphia with a population of only 40,000 persons. From 1860 to 1900 AD the urban area in United Stated is reported to have expanded five fold. A more remarkable phenomenon was the explosive growth of big cities. By 1860, there were nine American cities with more than 1 lakh inhabitants, and by 1900, the number was as large as 38 (Breese, 1969).

As against this, in the less developed countries the process of urbanization had its onset only during the period 1900–1950 (United Nation, 1995). During the first half of the 20th century in Asia the population living in the cities of 1 lakh and more, mounted from an estimate 19.4 million to 105.6 million i.e. a gain of 444 percent. Likewise, in Africa the number grew from 1.4 million to 10.2 million showing a gain of 629 percent. It may be noted here that the total world population did not even double in size during this period. While population of cities with 1 lakh and above persons increased more than three times in the same 50 years period.

On the whole, in 1800 only 3 percent of the total world population was urbanized and living in towns of over 5000 persons. The figure went up to 6.4 percent.
in 1850, 13.6 percent in 1900, 29.8 percent in 1950, 37 percent in 1970, 40 percent in 1980, 44 percent in 1990 and 47 percent in 2001. This figure is expected to reach 60 percent by the year 2030.

It is interesting to note is that as much as 97 percent of the net addition in population at the world level during the next 30 year (2000–2030) will be in the urban areas, and more than 90 percent of it will occur in the less developed countries (United Nation, 2007). During this period world’s urban population is likely to grow at an average rate of 1.9 percent which is almost double to the annual growth of 1 percent for the total world populations. The developed countries are already highly urbanized, and their urban share is not likely to increase much in foreseeable future. But, the level of urbanization in the developing countries is projected to increase substantially during this period, and the absolute size of urban population is expected to surpass the rural population by the year 2020. The level of urbanization is expected to reach up to 56 percent by 2030 (Dayal, 2004).

Urbanization in India

The history of urbanization in India dates back to period of Indus valley civilization. Indus valley civilization, the world’s oldest civilization, was associated with Harappan period which flourished for a period of 600 year from 2350 BC to 1750 BC. In Harappan period there were two major towns viz. Mohenjodaro and Harappa. These are now located is Pakistan. Mohenjadro the older and larger of the two at that time is said to have been ruined and rebuilt at least nine times in a span of 6–8 hundred year (Ramachandran, 1989).

The epoch of Mahenjodaro and Harappa was followed by a period often called ‘Dark Age’ spread over virtually thousand years. This Dark Age was marked with a period of the complete absence of urban centres on the Indian sub-continent. Latter on cities grew both is number and size during the Mauryan (300 BC to 600 AD) and post Mauryan period. Thereafter, Indian urbanization flourished during the period of Turks, Sultanate and Mughal Empire. Numerous towns and cities developed primarily due to geopolitical, cultural and religious reasons.

Afterwards, with the arrival of English and their occupancy of power through East India Company in 1800 AD, the process of urbanization underwent a significant change and witnessed the development of many cities and towns. The major contribution of the British to the Indian urban scene were: the creation of three
metropolitan port cities of Bombay, Calcutta, Madras presently known as Mumbai, Kolkata and Chennai respectively; creation of a chain of hill stations in the Himalayan region and in South India; the modification of the Urban landscape of the existing cities with the introduction of civil lines and cantonments; and the improvement in urban amenities and administration. As a matter of fact, all these culminated into a significant transform of the existing urban landscape in India. But there were quite a few negative consequences of British ascendancy on the process of urbanization in the country also.

One of the most crucial consequences relates to the negligence and decline of the pre-British cities. Urban centres that came into existence during British period along with towns/cities which played important role in the field of administration and trade were of strategic importance and were allowed to flourish while the rest stagnated.

It is apparent from the above discussion that the process of urbanization in India has passed through different phases of history. Looking towards it from the demographic point of view, the first census of India that took place in 1872 indicated a share of urban population of the order of only 8.7 percent. According to the census, the number of cities with the population of 1 lakh and more was 16 in all. Over a period of three decades, there was only a marginal increase in the share of population residing in urban centres in the country.

The 1901 census reported 25.8 million people living in town/cities that formed nearly 11 percent of the total population. Just as the total population remained almost static during the first two decades of the 20th century, urban population in the country did not grow until 1921. As a matter of fact the decade 1911–21 witnessed a decline in urban population owing to devastating plague and influenza epidemics which resulted in loss of life as well as an exodus of urban population to rural areas.

After 1921 the level of urbanization grew consistently, and the decadal growth in urban population during 1941–51 reached a high of 41.4 percent. The world war II (1939–45) and the partition of the country in 1947 were mainly responsible for a sudden hike in urban growth. The partition of the country resulted in a massive shift of people across the national boundary, and the migrants who came to India preferred to live in urban areas, as the towns were better and safer places for a secured life. The Government also established cantonment or refugee camps in the cities to provide
accommodation to the immigrants. This process played a significant role in the history of India’s urbanization.

It may be remarked that figure on the urban population prior to 1961 and since 1961 were not strictly comparable (Premi, 1991). On the eve of 1961 census, the definition of urban settlement was substantially modified, and was made more restrictive which resulted in the declassification of as many of 810 towns of 1951. The share of population living in the urban centres, thus, increased by less than 1 percentage point between 1951 and 1961 — i.e. from 17.39 percent in 1951 to 17.97 percent in 1961.

Thereafter, however, the pace of urbanization underwent a rapid acceleration. The decadal urban growth during 1971–81 reached an all time high of 46.1 percent. It is worth mentioning that the pace of urban growth once again slowed down after 1981. The decennial growth rate in urban population during 1981–91 was lower by 9.67 percentage point as compared to that in 1971-81. According to the Experts Committee and Planning Commission (1989) this slackening of urbanization process posed some serious questions to the scholars studying this phenomenon (www.planningcommission.nic.in). This slackening in the pace of urban growth was viewed differently by different scholars. Some attributed this to the slowing down in the rate of migration from rural areas while others (e.g. Premi, 1991) argued this to be due to decline in natural growth rate.

According to the latest census of 2001, 285.4 million persons live in urban areas, which accounts for 27.78 percent of the total population, and it is projected that the urban share will reach 40 percent in 2025 (www.hdr.undp.org). Here, one notable point is that although India reports only 27.78 percent of its population residing in urban areas, in terms of the absolute size of urban population the country ranks second in world after China. Moreover, the country has the largest number of mega cities in the world (Kaushik, 2005), and the net addition to urban population during 1991–2001 was more than the total population of France or Thailand. India has often been seen as a land of villages and hamlets. Nevertheless in reality it is equally a land of towns and cities (Ramachandran, 1989).

India’s urbanization is marked with not only large urban population and high growth rate, but also a city oriented process of urbanization. In 1901 there were 24 Class-I towns or cities which has become 393 in 2001, and the share of urban population living in these Class-I cities has increased from 26.00 percent to 68.7
percent during the same time. In addition to a rapid growth in existing Class-I cities, the main reason for increased dominance of cities in urban structure is the continuous up-gradation of lower order towns to upper order category (Sivaramakrishnan, Kundu and B. N. Singh, 2005)

In the words of Dasgupta (1993) the unbalanced, haphazard and uncontrolled growth of urban population poses a serious shortfall in basic services. The quality of life in these urban areas has gradually become from bad to worse over time.

The infrastructure facilities and services to support a large concentration of population are lagging far behind with the pace of urbanization (Kundu, 1997), as a consequence the environment particularly in the large cities is deteriorating very fast (Mohanty, 1993). The expansion of towns and cities is unmanageable for the local bodies. Hence health and sustainable development become a far distant dream (Roy, 1986). Finally, India's urbanization has reached at a stage where urban problems have assumed serious proportion. It requires urgent attention, especially in the context of basic services (Talwar, 2000).

This condition is not unique for Indian cities but is common for cities of all the developing countries. The urban populations in developing countries are rapidly increasing as discussed before but the infrastructure facilities have failed to keep pace with the growth in urban population (Ganeshwar, 1995). In India also, the problem has assumed a serious proportion in some select regions.

**Basic Amenity**

While discussing urban amenity it may be noted that every culture has its own definition of urban amenity. This is more so because the concept is tied to the culture's ideas on the nature and function of the city. So, we can find no simple definition of urban amenity. As Blumenfuled has remarked, the public park that commands a view of the waterfall, or a hill, valley, or plain, is itself an amenity. The business district that brings people of like interests together, shopping complex that is convenient in terms of access, restaurants, services, and place of rest, are all part of amenity. Buildings that provide protection from the wind and reflect sunlight into open space on cold days are also amenity.

The concept of amenity varies from society to society and culture to culture. But at the same time there are some amenities which are very ‘basic for all’ and therefore are called ‘basic amenity’. They are safe drinking water, sanitation services
and electricity. These are necessary for all, and directly or indirectly attached with consciousness of human development in various way. The former World Bank Chairman, Robert Mac Namara remarked that for better economic growth and higher productivity, emphasis has to be given to the health of people for which provision of basic amenity are necessary (www.indianest.com).

The former United Nation General Secretary Kofi Annan had once stated that access to safe drinking water and sanitation facility are fundamental to human need and, therefore, a basic human right. Contaminated water jeopardizes both physical and social health of all people. It is an affront to human dignity (www.hdr.undp.org).

Drinking Water and Sanitation: Access to drinking water and sanitation are two of the key indicators of human well-being. At the Millennium Summit in New York in 2002 and the World Summit on Sustainable Development at Johannesburg in 2002, representatives from various Governments explicitly recognized the importance of increasing access to safe drinking water and basic sanitation as essential prerequisites for development and reduction of poverty. They set goals, called MDG’s (Millennium Development Goal) to be achieved for the provision of basic amenities (www.unep.org).

Further, for a given amenity also there is difference of opinion with regard to norms and standard. For instance what constitutes ‘safe drinking water’ does not have a uniform norm. According to WHO and UNICEF, ‘Drinking water is water used for domestic purpose – drinking, cooking and hygiene. Additionally improved water source includes household connection, public standpipes, boreholes, protected dug wells, and protected spring and rain water collection (www.who.int). According to the Census of India, if a household has access to drinking water supplied from a tap or hand pump/ tube well situated within or outside the premises, it is considered as having access to safe drinking water (Census of India, 2001). According to National sample survey organization (NSSO), if a household obtains drinking water from same source throughout the last 365 days, it is treated as the principal source of water for the household. For NSSO there is no concept of supplementary source. Different sources of drinking water are: tap, hand-pump, well, tank, pond, river, canal, lake, tanker and other (www.mospi.nic.in). Just like Census of India, NSSO also considered tap and hand pump/tube-well as a safe drinking water source.
Tap water is supplied through pipe after suitable treatment, if required by Corporation, Municipality, Panchayat or other local bodies/authorities, or any private or public housing estate or water treatment agency. Water pumped up and supplied without any treatment or transported by pipe, untreated from river or well is not regarded as tap water. For National Family Health Survey (NFHS), safe drinking water includes piped water into dwelling/yard/plot, and water from public tap/standpipe, tube well or borehole. Protected dug well, protected spring, rain water, bottled water used for cooking and hand washing are also considered as improved sources of drinking water. Likewise, unprotected dug well, unprotected spring, tanker/truck or cart with small tank, surface water etc. constitute what is termed as unprotected water sources (www.nfhsindia.org).

In case of sanitation also various agencies have proposed various parameters. According to WHO and UNICEF, improved sanitation facilities are defined in terms of the types of technology and levels of services that are likely to be sanitary than unimproved technology. Improved sanitation includes connection to a public sewers, connection to septic system, pours flush latrines, simple pit latrines and ventilated improved pit latrines. Bucket latrines (where excreta are manually removed), public latrines and open latrines are not considered under the heading of improved sanitation (www.unicef.org).

Census of India collects data on sanitation on the bases of availability and type of latrines viz. pit latrine, water closet/flush latrine and other latrines. Availability of drainage water outlets is also considered a part of sanitation services. It may be closed or open. Census defines ‘pit latrine’ as, the latrines attached to the pit that is dug into the ground for the reception of night soil. Likewise, ‘water closet latrine’ as, are those latrines that have water closet fitted with flushing cistern. Such latrines may be connected to a septic tank or to an underground sewerage system. The faeces matter from these types of latrines is removed without the need for scavenging. All other types of latrines are clubbed under the heading of ‘other latrines’ by Census of India, while ‘service latrines’ are dry type of latrine from where human excreta is removed by scavengers. Moreover, latrines serviced by animals such as, pig etc.

At the time of house listing operation, data is also collected regarding the availability of drainage outlet in the household for the discharge of domestic waste water or rain water. The drainage may be of two types. It may be either open or covered/closed. Further, a house is considered as having connectivity to open
drainage if it has water outlet connected to an open drainage to carry away the waste water generated by the household living in it. Likewise, the house is considered as having connectivity to closed/covered drainage if it has water outlet connected to a closed drainage to carry away the waste water generated by household living in it.

According to the National Sample Survey Organization (NSSO) sanitation includes mainly the types of latrine available in household. The different types according to NSSO are; service latrine, septic tank, pour flush pit, sewerage system and other. Service latrine here refers to the non-sanitary latrine where the excreta is accumulated at excretion spot and physically removed regularly. A latrine connected to underground septic chambers is categorized as septic tank, while a flushing toilet with water seal (pan trap) and soak pit, where the liquid leached out from the pit to be dispersed in the soil system was regarded as pour flush pit. Besides, if a latrine is part of an off-site sanitation system, it is categorized as sewerage system, and all other type of latrines are categorized under the heading of ‘others’ (www.mospi.nic.in).

National family health survey India (NFHS) also provides data on latrine facilities available in household. According to NFHS, improved sanitations includes flush/ pour flush to pipes sewer system, septic tank, or pit with slab if they are used not an sharing basis (www.nfhsindia.org).

Electricity: Next to drinking water and sanitation, the today’s modest basic necessity relates to the access to electricity. International Energy Agency (IEA) defines access to electricity as the percentage of the total population that has electric power in their homes. It includes commercially sold electricity and self generated electricity (International Energy Agency Report, 2002). According to National Family Health Survey (NFHS) household having electricity connection within their dwelling unit are considered as having access to electricity. The National Sample Survey Organization (NSSO) collects data on the bases of source of lighting. The different primary sources of energy used for lighting by the households are, kerosene, gas, candle, electricity and other oil. The Census of India also provides information regarding source of lighting in the house occupied by the households. The data in the census is collected on the basis of six sources; namely electricity, kerosene, solar, other, oil, etc.
Basic Amenity – the World Context:

Safe drinking water, sanitation and electricity are fundamental to health, survival, growth and development. However, these basic necessities are still a luxury for many of the world’s poor people. Over 1.1 billion of our fellow citizens do not have access to drinking water from improved sources, while 2.6 billion lack basic sanitation and 2.5 billion people have no access to electricity at all (UNICEF and WHO, 2008).

Safe drinking water and basic sanitation are obviously essential to once health. Efforts to prevent death from diarrhoea or to reduce the burden of such diseases as ascario, drancunculiasis, hookworm, schistosomaisis and trachoma are doomed to failure unless people have access to safe drinking water and basic sanitation. Lack of basic sanitation indirectly inhibits the learning abilities of millions of school going children who are infested with intestinal worms transmitted through inadequate sanitation facilities and poor hygienic condition (WHO and UNICEF, 2006). According to an estimate nearly 2.2 million children die annually due to dirty water and poor sanitation the world over (www.water.org). In the year 2000, as many as 2 million people lost their lives from acute respiratory disease; of these 60 percent deaths were associated with indoor air pollution and other environmental factors directly or indirectly linked with non availability of electricity in their dwelling units. The houses without electricity are dark graves. They produce harmful gas which pollutes indoor environment and badly effects respiratory system of the dwellers and even may cause death (UNESCO, 2002).

Drinking water as per the joint report of WHO and UNICEF (2006) reveals that 87 percent of the total world population had access to drinking water from improved sources. Of this 54 percent people had piped connection in their dwelling units, plots or yard, and 33 percent used other improved sources of drinking water. The corresponding figure on percentage of people having access to improved sources of drinking water was 77 percent in 1990. In absolute terms, at the global level, the number of people using improved sources of drinking water has increased by more than 90 million people a year since 1990, but because of rapid growth in population the absolute number of people without coverage of the improved drinking water has only decreased by about 10 million people a year (UNICEF and WHO, 2008).
A comparison of the status of availability of improved drinking water in the developed and less developed countries indicates a stark contrast. While in the developed countries as many as 99 percent of population has access to improved drinking water, the corresponding figures for the less developed countries is at best 84 to 85 percent. The availability of improved drinking water has increased by 13 percentage points during 1990 to 2006. However, the distribution of population without the access to safe drinking water reveals that nearly 80 percent of the unserved population is concentrated in three major regions viz. Sub-Saharan Africa, Eastern Asia and Southern Asia. It is also revealed that nearly 50 percent of the population worlds wide without access to improved drinking water is concentrated in Eastern Asia alone while another 30 percent live in sub-Saharan Africa. Evidences indicate a stark gap in the availability of improved drinking water not only between regions/countries but also between different segments of people residing in the same region. One such differential can be seen between the rural and urban dwellers in a country or region. The urban areas have always displayed greater coverage of safe drinking water than its rural counterpart.

The drinking water converge in the urban areas has remained almost identical from 1990 to 2004 at 95 percent level. As against, this in rural areas the coverage has increased to 73 percent in 2004 from 64 percent in 1990. In developed countries the coverage of drinking water in urban area is almost near to 100 percent where as in developing countries the same is 92 percent. Nearly 70 percent of the people have access to piped water connection within their houses. But, the challenge in the urban area is different. Urban coverage with improved drinking water has remained practically unchanged over the past 15 years. The admirable achievement is threatened by the predicted urban population growth over 2005–15. According to available estimates 755 million people are likely to be added in urban areas due to both natural increase as well as migration and a considerable gain will be recorded in the developing countries (United Nation, 2000).

Another aspect for concern is ‘distance’ covered for the source of drinking water. Taking an example of Africa, million of women and children travel a long distance daily to fetch water. On an average, a member of the household (commonly a women or a child) takes almost half an hour to reach the water source, fetch water and return. All this jeopardizes the children education and gender equality (www.unwater.org).
Access to basic sanitation is also a crucial human development goal in its own right. For millions of people, not having safe, private and convenient toilet facility is a daily source of indignity as well as a threat to being well. The sanitation is also a means to far wider human development. Without basic sanitation the benefits of access to clean water are diminished, and the health, gender and other inequalities associated with the sanitation deficit systematically undermine progress in education, poverty reduction and wealth creation (www.worldhunger.org)

The importance of sanitation is indisputable. It is a crucial stepping stone to better health. Better sanitation offers us the opportunity to save lives of 1.5 million children a year. It is fundamental to gender equity as it protects women’s dignity and is a key to economic development. Investments in sanitation protect and investments made in other sectors such as education and health bring measurable economic return (UNICEF and WHO, 2008). Therefore, the United National General Assembly declared 2008 as the International Year of Sanitation.

The combined report of WHO and UNICEF on the coverage of sanitation in 2006 indicates that only 62 percent of the world population has access to any type of improved sanitation facility. In other words 4 out of 10 people around the world have no access to improved sanitation. They are obliged to defecate in the open or use unsanitary facilities, with a serious risk of exposure to sanitation related diseases. The open defecation is, however, declining in all regions of the world, dropping from 24 percent world-wide in 1990 to 18 percent in 2006. This 18 percent world population means 1.2 billion people. However only 13 percent of them are living in urban areas and are creating more harmful, painful and dreadful environmental conditions (UNICEF and WHO, 2008).

On the whole, in rural population of the world the coverage of improved sanitation has risen from 26 percent in 1990 to 39 percent in 2004, and if this trend continuous it will have risen to 49 percent by 2015. But still about half of the rural population will be without basic sanitation up to 2015. In urban areas 81 million people will be added to 611 million already without basic sanitation in 2004 by the year 2015.

Further the global average statistics on sanitation hides more than what it reveals. In some developing regions where the average coverage is still around 50 percent, one out of every two people has no access to some sort of improved sanitation facility. At the regional level, of the 2.5 billion people who do not have
access to improved sanitation facilities, almost 1.8 billion are in Asia. The regions showing the lowest coverage of sanitation are Sub-Saharan Africa and South and Western Asia. It is remarkable to note that, as much as half of those without improved sanitation in the world live in China and India alone (UNICEF and WHO, 2006). These two countries accommodate nearly 1.5 billion people without improved sanitation.

Just as in the case of safe drinking water, the coverage of improved sanitation also shows stark gap between the urban and the rural areas. Evidences indicate the largest disparity between rural urban coverage in the Oceania, Latin America, the Caribbean, and South Asia. On the other hand, the smallest difference is noticed in Eastern Asia but even there is a gap of 15 percentage points. This condition needs attention of researcher, planner and administrators etc.

Electricity has been universally recognized as one of the most important inputs for economic growth and human development. As an economy grows over time, income rises, and the demand of energy also increases. In fact evidence covering a cross-section of countries and regions clearly show that as per capita income rises per capita/ person energy use also goes up. Electricity is an essential requirement for all facets of our life. It has been recognized as a basic human need (Shankar, 2005).

At the global level in 2006, 1.6 billion people, forming about one quarter of the world population did not have access to electricity. Eight-tenths of these people live in rural areas of the developing countries mainly in South Asia and Sub-Saharan Africa. As against this percentage of people with access to electricity is over 97 percent in East Asia, Eastern Europe, North America, Western Europe and Japan. A noticeable point here is the fact that of 1.6 billion people in the world without access to electricity nearly 25 percent live in India alone (www.teri.org).

Basic Amenities in India
India is a vast country. It is the world’s largest democracy, and also has a large number of people without basic amenity like drinking water, sanitation and electricity. The estimates indicate that over 170 million people don’t have access to safe drinking water, 690 million without adequate sanitations and 582.6 million are without electricity in their dwelling units (World Development Report; 2008, World Population Bureau Reports: 2008, UNICEF Report: 2008).
According to the Census of India 2001, 77.92 percent of the household in the country have access to safe drinking water. Safe drinking water includes tap water and water drawn from hand pumps and tube wells. Of the total household with access to safe drinking water 39.9 percent household have these facilities in their dwelling units or within premises as categorized by the census. In the category of safe drinking water, the tap water is the safest mode for drinking water. However only 36.7 percent of the household have tap connection. In other words, well our six tenths of the household in the country do not have access to tap water connection.

In terms of difference between rural and urban areas, with regard to drinking water facility, the data collected from various agencies like as Census of India, National Sample Survey Organization, NFHS, NCAER and MICS indicate that the situation in rural areas is more deplorable. According to available estimates, only between 69 to 74 percent of the people in rural areas have access to safe drinking water. On the other hand, in the urban areas the figure lies between 91 to 93 percent. Although the coverage appears somewhat satisfactory, water supply in urban areas is far from satisfactory. Even if we take 100 LPCD as the criterion for defining water deficient and sufficient household, 65 percent of the sample household remain water deficient in India (WHO and UNICEF, 2002).

It is also observed that water consumption in Indian city is far lower than the norms laid down by the ‘Bureau of Indian Standard; (70–250 lpcd). The lower consumption is mainly because the water supply is not keeping pace with population growth and increasing need of users (Shaban and Sharma, 2007). It should be noted that the supply of water in large cities of India is going to be a serious challenge in the future. The average access to drinking water is the highest in Class-I towns/ cities where 73 percent of the household have access to drinking water. This is followed by 63 percent in Class-II, 61 percent in Class-III, and 58 percent in other towns of IV, V and VI class category. The slum and squatter settlement are almost deprived of such facility and the people just depend on public standpoints and other tube well and hand pump for water. The problem of drinking water should be viewed not in terms of quantity alone. In case of ‘quality’ nearly 66 million people across major 17 states in the country are estimated to be at the risk with fluoride contents, while yet another 13.8 million people are affected by arsenic water.

In case of sanitation, looking at the scenario of India on the basis of 2001 census one can see that only 40 million dwelling units of a total of 200 millions across
the country have toilet facility inside the house. In other words, only 36.4 percent of the dwelling units are reported to possess toilets. This means that over 63 percent of households are deprived of latrine facility. According to the census, there are 3 categories of latrines of which ‘water closet’ is the most suitable from hygienic point of view. It is very disturbing to note that only 18 percent of the total households in the country have access to this type of latrines.

While comparing the status of latrine facility in rural and urban areas, it can be seen that a huge difference exits between the two. About 71.34 percent rural households have no access to latrine facility. While in the urban areas over 80 percent of households are reported to have latrine facility in their dwelling unit. Despite this the urban environment is more badly affected by congestion, open drainage, and lack of sufficient space for other activities.

In India, over 700 million people defecate in the open along road sides, on farmland, or in public places. According to the Water Supply and Sanitation Council a single gram of faces can contain 10 million viruses, one million bacteria, a thousand parasite-cysts and a hundred eggs of worms. No wonder, water contaminated with feces matter causes diarrhea. With proper sanitation, the risk level can drop by 40 percent, Malnutrition, anemia or retarded growth 60 percent, blindness 25 percent, schistosomiasis 77 percent and cholera 72 percent. In addition, over 180 million man days – equivalent to 12 billion rupees – are lost in India very year because of sanitation related diseases (Kumar, 2003).

The Planning Commission of India reported that between 4 to 5 lakh children under the age of five die due to water-borne diseases such as diarrhoea, hepatitis and typhoid in India, and there are fears that these number are grossly under represented (www.planningcommission.nic.in).

According to the World Health Organization, 80 percent of diseases in the country are water borne diseases, a result of poor sanitation and a far from adequate sewage disposal method. Less than 40 percent of India’s population has access to proper toilets, and those who don’t have no choice but to relieve themselves in the open, be it on railway track, riverbank, agriculture land or public parks leading to grave health risk by contamination.

On the top of that, may Hindus particularly in the countryside still believe that constructing a toilet in or near a dwelling is a matter of grave impurity, and so even the residents in those villages that do have latrine built by the government rarely use
it. Clearly, if timely and adequate action is not taken, chances are that India might sink under its own waste (http: nposmline.net).

The situation in respect to connectivity of waste water outlet is more alarming. It can be seen that only 12.46 percent of households in India are connected with closed drainage system. Remarkably, only 3.91 percent rural households have drainage connectivity. The corresponding figure for the urban areas is 34.50 percent. Finally more than half of the population in the country does not have proper sanitation facility. It goes without saying that that drinking water and sanitation is not only a basic necessity of life but also crucial for achieving the goal of ‘Health for All’ (www.esa.un.org).

On other side ‘electricity’ is one of the key factors in economic development. It is indeed a modern basic need of human beings. Despite importance, nearly 44.2 percent of household in India are without electricity. In terms of rural-urban break up 26.28 percent of household in urban areas and 56.48 percent of household in rural areas do not have access to electricity. Of the total 13.8 crore households in India, 6.02 crore households primarily use electricity for lighting their houses. Present Hon’ble Prime Minister of India, Dr. Man Mohan Singh stated in his speech that 78 million Indian homes are deprived of this facility till today by 2009 (http: indiadaily.com)

Although the coverage is somewhat better is urban area, most of cities and town face the problem of power cuts and the situation gets worse in the summer season when the electricity demand is on its peak.

Looking at the pace of urbanization and its impact on availability of basic services, the increasing gap between two has become a matter of concern for both State and Central Government. This needs effective policies and programmes to manage the quandary. In the light of these problems the Government has launched various policy and programme to mitigate these problems. In this reference, a brief account of various programme launched during the five year plans is discussed in the forthcoming paragraph.

Basic Amenities under Five Year Plans: In the 1st Five Year Plan there is no reference to urban policy. However the plan did recognize the acute shortage of housing and the rapidly rising land prices in metropolitan areas. On the positive side the first Five Year Plan period (1951-61) saw massive house construction and land development
activity, particularly in Delhi, where several refugee resettlement colonies were established. In addition, a number of new towns were also established in different parts of the country for housing in-migrants from Pakistan. By the end of the First Five Year Plan several institutional set-ups were introduced. A new Ministry of Works and Housing was first established and later renamed as the Ministry of Urban affairs. The National Building Organization was established to design low cost housing. The School of Planning and Architecture in Delhi and Regional and Town Planning at the Indian Institute of Technology, Kharagpur were established to train personnel in town and country planning. The Town and Country Planning Organization was also established in 1957 to prepare the Delhi Master Plan and provide advice and policy guidance to Central and State Governments on urban problem. In case of water and sanitation, the First Five Year Plan included provision of water supply and sanitation under the Community Development Programme. In 1954, the National Water Supply and Sanitation Programme were announced as a part of the health schemes to assist states in the implementation of their urban and rural water supply and sanitation scheme. The schemes launched in the first plan however did not make satisfactory progress.

The major thrust of the Second Five year plan was on industrial development, and urbanization by and large did not attract much of attention in the policy document. The only worth mentioning event was the preparation of Delhi Master Plan which was first of its kind in India. The plan is counted as a prime step in initiating city planning in the country. It later stimulated action in some other states. In case of water and sanitation programme a greater thrust with allocation of more funds to cover the entire rural areas was made during the second plan, and the urban areas remained relatively ignored in the Second Five Year Plan.

The main objective of the Third Five Year Plan was to secure a balanced development between rural and urban areas. While this was by no means easy to realize, the third plan specifically recognized the role of industrialization in urban development. The main focus of development policy during the Third Five Year Plan was on dispersal of industries away from large cities. The plan document also outlined that need of taking into account the immediate environs surrounding a centre of large industrial unit. It was also emphasized that the rural and urban components of development should be knit into a composite plan in order to strengthen economic inter-dependence between towns and the surrounding rural areas. In addition,
industries were to be encouraged in industrially backward districts and in the smaller cities and towns having no industrial unit. A variety of incentives in the form of lower taxation, subsidies for infrastructure, help in land acquisition, provision of electricity, roads and so on, were to be offered. All this contributed to the dispersal of industries towards the small towns or cities. Furthermore, in order to control land prices certain efforts were taken during the third plan. The Plan provide for a sum of about Rs. 29 crore for slum clearance and improvement in selected slum areas. For clearance and improvement in the quality of life in slums high priority was given to areas predominantly inhabited by sweepers and scavengers. On the whole, the third plan did not accord due emphasis on drainage and sanitation programme.

The Fourth Plan laid considerable stress on the improvement of the administrative structure in cities and towns. Direct grants were also given to cities with acute problems. It advised the state governments to create planning and development authorities for the larger cities and asked them to give more fund to the Municipal Bodies. Apart from this, it also made a plan for an urban land policy at the state level. According to the plan document, the land policy should aim at: the optimum use of land, making land available for weaker sections, reducing or preventing the concentration of land ownership, rising land values and speculation on land, and allowing land to be used as a resource for financing the implementation of city development plans. During plan years, Housing and Urban Development Corporation (HUDCO) was established to provide funds for metropolitan authorities, State Housing Boards and other urban institutions to finance schemes for the construction of houses in urban areas. A scheme for Environment Improvement of Urban Slums was undertaken in the central sector from 1972-73 with a view to provide a minimum level of services like water supply, sewerages, drainage, street pavements in 11 cities with a population of 8 lakh and above. The scheme was later extended to 9 more cities. Focusing on water and sanitation, a central scheme was started in states. Accelerated Rural Water Supply Programmes (ARWSP) was introduced in 1972-73 as a part of the overall programme of special social welfare scheme, whereby 100 percent grants-in-aid was given to states and U.T. for extending water supply to villages in acute water scarcity, especially area inhabited by SC, ST and other backward classes. UNICEF assistance in the form of 118 high speed drilling rigs also accelerated the exploitation of groundwater in hard rocky areas. In addition, the Rural Electrification Corporation (REC) was also established as a public sector undertaking
in the plan. The principal objectives of the corporation were to finance rural electrification schemes and promote rural electricity co-operatives for funding rural electrification projects across the country.

The Fifth Five Year Plan had a special thrust on urban development. The main objectives of plan were: to augment civic services in urban centres, to tackle the problems of metropolitans cities on a regional basis, to promote the development of small towns and new urban centres, to assist inter-state projects on metropolitans projects and to support industrial township under government undertakings. The Fifth Plan (1974-79) also reiterated the policies of the preceding plans to promote smaller towns, in order to ease the increasing pressure of urbanization. This was to be supplemented by efforts to augment civic services in urban areas with particular emphasis on a comprehensive and regional approach to problem in metropolitan cities. A task-force was set up for development of small and medium towns. The Urban Land (Ceiling & Regulation) Act was enacted to prevent concentration of land holding in urban areas and to make available urban land for construction of houses for the middle and low income groups. Additionally, Minimum Needs Programme was also launched under the 5th Five Year Plan. The Minimum Need Programme (MNP) was introduced with the objectives to provide certain basic minimum facilities and thereby to improve the living standards of the people – it was the expression of commitment of the Government for the social and Economic development of the community. In 1978, the Alma Ata International Conference on primary health reaffirmed health for all as the major social goal of the governments and called up on all the governments to formulate national policies, strategies and plans of action to achieve the objective. Achieving the objectives of ‘health for all’ requires a complete coverage of water and sanitation. The Government of India also declared 1980s as the International Water Supply and Sanitation Decade, and programmes were launched to achieve the target of 100% coverage of rural and urban population with safe drinking water supply facilities, 80% coverage of urban population with sanitation and 25% coverage of rural population with sanitation. At same time due attention was also paid to considerable improvement in increasing power sector. In particular, due consideration was given to inter and intra-state transmissions lines, strengthening of regional load dispatch centres, and investments on distribution system so as to reduce transmission and distribution losses.
In the Sixth Plan the major emphasis was on the improvement of environmental conditions in slums area and development of small and medium towns. Under the Plan facilities like road, pavement, bus shed, market, shopping complex and theaters etc. were promoted. For fulfillment of the objectives of the Plan various schemes were also launched, some of the major scheme and programme include Integrated Low Cost Sanitation Scheme (ILCS), Environmental Improvement of Slums (EIS) and Integrated Development of Small and Medium Town (IDSMT).

Under Integrated Low Cost Sanitation Scheme (ILCSS) low cost latrines were provided to the households without latrine facility. Moreover, up to some extent scavenger were also liberated from dirty jobs. As likely to ILCSS another slum improvement scheme which was launched during 6th Plan was Environmental Improvement of Slums (EIS). The main objectives of the scheme were to improve slum area by providing those basic facilities which could improve and maintain their quality of life. Other centrally sponsored scheme was Integrated Development of Small and Medium Town (IDSMT). The scheme was launched under 5th Plan but Government with some modification continued the scheme in the 6th Plan. The major modification and objectives for the 6th Plan under scheme were, to extend the coverage by including towns having a population of less than three lakh. In selection of the towns under the scheme for assistance, additional criteria based on the town’s antiquity, aesthetic character, historic association etc. were also adopted. Under the scheme infrastructure like road, pavement, civics works and other amenities were provided to the small and medium town.

With particular reference to water and sanitation several programme which were launched during the 7th Plan tenure. They were National Drinking Water Mission (NDWM), National Technology Mission (NTM), Urban Basic Service for Poor (UBSP), National Water Policy (NWP), National Housing Policy (NHP), Global Shelter Strategy (GSS) and Kutir Jyoti Programme (KJP).

The objective of National Drinking Water Mission was to cover and provide drinking water to all habitations, and to ensure water supply of more than 40 lpcd for human being and additional 30 lpcd for desert areas for cattle. Under the scheme, awareness camps and community participation programme were strictly implemented to conserve drinking water. The program was later renamed as Rajiv Gandhi Drinking Water Mission (RGDWM) during 7th Plan. Some sub-projects launched under RGDWM, paid foremost attention to eradication of guinea worm, control
brackishness, fluorosis and removal of excess iron on the scientific basis from drinking water. Ground water recharge and conservation were some other prime objectives of the scheme. The thrust of the National Drinking Water Mission was also on drinking water. The main objectives of NDWM were water harvesting, conservation of water resources and application of science and technology inputs in an integrated manner for generating cost effective long term solution. Another program launched during 7th Plan was Urban Basic Services (UBS) Programme. The program was further integrated with Urban Poverty Alleviation Programme which was then renamed as Environment Improvement of Urban Slums (EIUS). The target of programme was mainly the urban poorer. Women and child were other special beneficiaries of the scheme. Under the scheme poor people, women and child were educated for their self development. In additional, physical amenities (drinking water, sewerage, pavement) etc were also promoted under scheme. During 7th Plan period, to promote sanitation services a special policy was also developed for urban areas. The policy was named as National Urban Sanitation Policy. The vision of the policy was to discourage and demote open defecation in urban areas and save environment. Urban poor were main target of policy. Private-Government partnerships were included to support the scheme. In overall assessment, the vision of Urban Sanitation Policy was to totally sanitize all Indian towns and city for health and liveable environment, and special focus was on the hygienic and affordable sanitation facilities for the urban poor and women.

In light of experiences gained during the 7th plan and subsequent annual plans, the thrust of the 8th Five Year plan was also on consist implementation of the urban strategies and formulation of new plan strategies. The major programme and strategies were Global Shelter Scheme and National Housing Policy. The objectives of both the programmes were to improve housing condition of poor people and to provide house to homeless persons. Basic infrastructure and amenities to all ‘medium and small towns’ were also the thrust area of strategies. Moreover, in view of the deteriorating environment condition caused by both natural and manmade factor the conventional plans of cities were also modified under the plan. In the Integrated Development of Small & Medium Towns (IDSMT) Scheme (which was initiated in 1979-80) emphasis has been given to employment generating strategies and infrastructural facility in the towns to reduce migration of population from rural area to urban one. In 8th Plan the Urban Basic Service Scheme for the urban poor was also
upgraded. Under scheme mentally retarded and handicapped children, rehabilitation of alcoholics, drug addicts and street children were emphasized. *Nehru Rozgar Yojana* (NRY) which was launched in 1989 was also thrust of 8th Plan. The target was mainly for poor people living below the poverty line in urban areas. Under Yojana scheduled caste and scheduled tribe urban poor were under special coverage. Finally for National Capital Region the Plan 2001 was also approved during 8th Plan. The main objectives of NCR plans were to develop infrastructure and transport in the region. In addition in NCR Plan 2001 special attention was also be given to Delhi Metropolitan Area (DMA) towns to reduce population pressure of Delhi.

The thrust area of 9th Plan was to developed town and cities as economically efficient, socially equitable and environmentally sustainable urban landscapes system and upgrade urban infrastructure services to meet the need of growing population. For promoting urban infrastructure private participation was also promoted under the plan. For drinking water and sanitation services the priority concern was coverage, adequacy, quality, distance and recycling of waste water. In addition, management and maintenance of water leakage, over exploitation of ground water and sewerage privatization, and community participation has also been emphasized in 8th Plan. Special efforts have been made for improvement in sanitation services during the plan. Technology innovation and implementation of liquid and solid waste management programme was given due focus to achieve the target ‘Health to All’. During 9th Plan changes has also been done in the Scheme of Environment Improvement of Slums (SEIS). The scheme was replaces by National Slums Improvement Programme (NSIP). The thrust of NSIP was to provide basic amenities like water supply, drainage, public bath, public toilet and street light to slum areas of town. To upgrade slum life elementary education, adult education, non-formal education, child health care, primary health etc. were also promoted under NSIP. To provide shelter to urban poor, improvements attempted in existing houses and new houses were also developed for houseless persons under 9th plan.

The major task of 10th Plan was on urban management issues. It revolves around the strengthening of the democratic structure, with the assistance of the state government agencies and the urban authorities. Public-private partnership was promoted for ensuring efficient and better service delivery. On the basic of census data information of urban growth was provided to balanced development of urban landscape. An extra effort was made for cent-percent coverage of safe drinking water
and sanitation services. The waste water re-uses or conservation of potable water for washing of vehicles and maintenance of garden has promoted under the plan. To make water system efficient, maintenance of rusted pipes in order to control loss through leakages was among other prime targets. Rain water harvesting was made mandatory for all urban units. Re-charge of ground water, preservation of drying water bodies and exploitation of ground water were closely monitored by Central Ground Water Board (CGWB). Moreover, under 10th Plan special attention was given to scheduled caste population in terms of civic amenities and housing. A special scheme launched for scheduled castes’ during 10th Plan was Valmiki Ambedkar Awas Yojana (VAMBAY). The VAMBAY was launched in 2001, to ameliorate the condition of urban slums dwellers living below poverty line without adequate shelter. The primary objective was to facilitate the construction and up-gradation of dwelling units for slum dwellers, and to provide a healthy and enabling urban environment through community toilet under Nirmal Bharat Abhiyan. The scheme of Night Shelter for Urban Shelter Less (NSUS) was also modified during the plan. The scheme was further merged into VAMBAY. Under NSUS, roads, gutters, public latrines, water supply pipes etc. were provided to poor people living in slums areas. In addition, a special scheme to provide sewerage for the River Bank Town was also launched during the 10th Plan. Under the scheme serious attention had given to those towns located on the bank of river and that which did not have adequate treatment facilities for sewerage and safe waste disposal. The Ganga Action Plan was also stretched during the 10th Plan. As many as 27 major rivers, 149 towns in 16 states were covered under GAP. In view of providing healthy environment to urban landscape, Accelerated Urban Water Supply Programme (AUWSP) was also upgraded as according to United Nations declaration for urban water and sanitation. The major objectives of program were protection of the environment and safeguarding of health through the integrated management of water resources and liquid and solid waste, organization reforms, promoting an integrated approach and including changes in procedure, attitude behavior and maximum participation of women at all levels.

Some other schemes which were introduced during 10th Plan were Leak Detection Scheme (LDS), Special Development Program for Pilgrimage Centers (SDPC), Dalit Bastis Sudhar Yojana (DBSY), Bharat Nirman and Swajaldhara. Under ‘Leak Detection Scheme’ training was given to the concerned field staff to detect the leakages at various levels to stop leakage, and minimize loss of revenue which was
used for water supply and electricity. In Special Development Program for Pilgrimage Centers, the prime aim of government was to provide basic civic amenities such as drinking water, drainage system, street light etc. to large number of pilgrims visiting pilgrimage centers. Another scheme was Dalit Bastis Sudhar Yojna, and the prime objective of scheme DBSY was for benefits to Dalit Basti having scheduled caste population of more than 50 percent. Along with IDSMT, a centrally sponsored scheme was initiated in the year 1979-80. The main objectives of the scheme was to speed up investment in the development of small urban centres, to improving infrastructural facilities and helping in the creation of durable public assets in small and medium towns which decentralize economic growth and employment opportunities and promote dispersed urbanization. This was intended to help in reducing migration to large cities and support the growth of surrounding rural areas. Some other schemes and programmes on urban development included Bharat Nirman, RGGVY, AREP, REST, Kutir Jyoti, and Swajaldrha started or launched during 10th plan to disintegrate gap between rural and urban area.

The targets of the 11th Plan is to provide cent-percent coverage of safe drinking water and sanitation facilities to entire urban population by the end of 2012. For initiating reform in infrastructure development in urban area the Government of India has launched two mega programmes, Jawaharlal Nehru National Urban Renewal Mission (JNNURM) and UIDSSMT. The JNNURM cover 63 cities including million-plus cities (as per 2001 census), state capitals and culturally important towns with and a tentative outlay of Rs 10,00,000 crore. Water supply and sanitation services, solid waste management, road network, urban transport and redevelopment of old city areas are accorded top priority of the programme. The other programme is UIDSSMT, which is for the remaining all 5098 towns having population less than one million. The prime objectives of the programme are to improve infrastructure facilities and create a durable public assets and oriented services in towns and cities. Public private partnership in infrastructure development and city planning is also promoted under scheme. Some other common target of JNNURM and UIDSSMT during 11th Five Year Plan is to give special attention to towns/ cities regarding surface and ground water contamination due to chemical intermixing. The cities or towns located in drought prone areas with shortage of water and quality problem are given priority for selection by State Government for construction of multipurpose dams/ reservoirs for water for sufficient domestic use.
An adequate thrust is also given to Operations & Maintenance under the Plan. In addition, rain water harvesting system has been made mandatory in both public and private building complexes, including commercial and industrial units. Under the Plan in respect to taking, user charge etc. greater autonomy is given ULBs (Urban Local Bodies). Moreover special instruction is given to ULBs to ensure prevention and control of water borne diseases. A telescopic water user charge is formulated to discourage excessive use of water (taking examples of Delhi and Paris). In addition computerized MIS is promoted for strong data base for water and sanitation sector discussions and making planning. Recycling and re-use of sewage after desired degree of treatment for various non-potable purposes is also promoted under the Plan. In case of slum development, special subsidy advantages for water supply, sewerage, metering, construction of latrine has given to poor people. Here some additional advantages are given to scheduled castes and scheduled tribe population living in the slums areas. In the Plan there is also a provision of sewerage facilities to unauthorized housing colonies. For avoiding water-logging and flooding of street in the residential areas during monsoon period, a comprehensive plan is also under implementation. Among the rest, vision awareness campaign for water quality, safe drinking practices, handling, storage and conservation of water, use of latrine, separate storage of dry and wet garbage and its hygienic disposal are other prime objectives of 11th Five Year Plan.

After, implementation of various plan, policies and schemes the urban population is growing with a fast tempo and the infrastructure in cities and towns are woefully inadequate and not been able to keep pace with increasing population (www.earths.org). The rapid urbanization and lack of basic amenities are the major issues of concern for the fast growing urban regions to maintain quality of life.

It is in this context that the National Capital Region of Haryana (henceforth called NCR-Haryana) has been chosen for the present study. NCR-Haryana has undergone rapid growth in urban population during the recent past. It is interesting to note that the decadal growth in urban population in Haryana during 1991–2001 has been faster than that in other major states of the Indian union. Even within Haryana, towns and cities of the NCR-Haryana have grown faster than the others. The absolute size of urban population of the part of NCR lying in Haryana will therefore double in just 14 year as compared to 20 year in rest of Haryana. With regard to basic amenities viz. drinking water, sanitation and electricity the NCR-Haryana fares even worse than
the rest of Haryana. The region reports 17.41 percent of the households without drinking water availability. Pertaining to tap water supply, only about 45 percent of households have access to this facility. Considering only urban areas the picture does not appear to be any better and only 66.39 percent of households in the towns/cities have access to tap water facility up to now. As such the quality of water in the NCR is also not good for drinking purpose. People are exposed to life threatening diseases if they drink such water for long (Potter and Kumar, 2004). The per capita availability of water in most of the urban centres has dwindled over the last decade due to rapid urbanization and lack of financial resources for augmentation (NCRPB, 2021). In case of sanitation services, 54.62 percent households are devoid of toilet facility in their dwelling units in NCR-H. The condition is somewhat better in urban areas but still up to now more than 1 lakh households are without toilet facility, and the people use open space for defecation. The expansion of sewerage network has lagged behind the growth of population resulting in overflow of sewage into drains causing pollution or creation of cesspools in low lying areas of the towns/cities. There are imbalances in the coverage of municipal sewerage system in various parts of cities/towns. Significant portion of city/town population is living in the marginal settlement, unauthorized colonies and urban village etc, and are completely devoid of municipal sewerage systems. In old part of cities, the sewerage system is quite old and overloaded, which requires of phased replacement or rehabilitation. As per the latest census data only 3.80 percent or rural and 37.78 percent of urban households in NCR-Haryana has been connected to waste water outlet with closed drainage system. The reality can be checked in rainy season when the whole cities/towns are converted into garbage outlets, and one cannot dare to pass the streets which are converted into gutters. The electricity coverage in the region can be gauged from the fact that 18.17 percent of households do not have electric connections. However the state of Haryana ranks very high in terms of electricity coverage as in India. By early 1990s, every village and every town in the state was already electrified. The rural-urban difference in the coverage of the drinking water and sanitation in NCR-Haryana is not so high. Electricity coverage is 76.38 percent in rural areas and 91.28 percent is urban areas. But availability of electricity remains a problem just as elsewhere in the state. Evidences indicate that the region has been deficient in electricity supply during the recent years. Generally there is power cut of minimum 4 to 5 house daily in urban
areas and the rural households have sometimes electricity available only on alternative days. People are forced to lead a pathetic life particularly during summer.

The picture of some of the fast growing urban centres like Bahadurgarh city is even worse. Bahadurgarh is one of the fastest growing urban centres in not only NCR-Haryana but also in the whole of the state. The population of the town has grown at the rate of 113.78 percent during 1991–2001 and took only 13 years to double its population. However the status of basic amenity in city is in poor condition. The city provides tap water supply to just 48.29 percent of its household, and the remaining household are dependent on hand pump and tube wells, which are brackish and not safe for drinking purpose. The condition of sanitation services is also not satisfactory. The city has 14.32 percent of households without latrine facility in their houses. However, the safest mode of latrine ‘water closet’ accounts for a little over one fifth of the households. Focusing on drainage facility, it also not good and only 32.8 percent of households are connected to closed drainage system in city. The peripheral dwellings of unauthorized colonies are the major suffers. The open defecation ruin the urban environment and the condition become worst during the rainy season when human waste float in streets. In addition, there is also no sewerage treatment plant in the city. The untreated sewage is either discharged into open drains or utilized for irrigation purpose. The city generates about 25 mt/day of solid waste without any proper means for disposal in environment friendly manner. The city also has no landfill site earmarked for the waste disposal purpose (NCRPB Plan: 2021, 2005). In last, electricity problem is also terrible in the city. There are normally 5–6 hours power cuts daily in the city. The situation becomes worse in summer seasons when there is no light, and there is no drinking water supply because of power cut, and people are forced to live in a dehumanized condition. In case of electricity coverage the picture appears to be different with only 3.21 household without electricity facility. The peripheral areas mainly jhuggies or slums along the railway track representing urban poor as a whole are devoid of these facilities and live a pitiful life. Thus, such towns and cities need urgent call for an effective planning to manage a fast growing urban population.

According to Sunita Narian, the Director of CSE, the problem of basic amenity in cities is going to grow to ghastly proportion, if some remedial measures are not taken up immediately (Narian, 1978). In addition, the high rate of urbanization and lack of basic amenity play will severely impact upon the economic prosperity in
global economic era, and the deficiency in the basic amenity will act as a handle in attracting the private investment from within and outside the country. It is, therefore, necessary to focus on such major issues (Kundu, 2003). The former World Bank chairman Robert Mac Namara stated that for better economic growth rate and high productivity emphasis has to be given to the health of people for which provision of utilities like water supply, sanitation services and electricity services are necessary. This calls for remedial measures immediately.

Review of Literature:

The interest of scholars in urban field has a long history. Research on urban issues in social sciences has been undertaken in a variety of ways depending upon the concern of the researcher. Different aspects have dominated research in this field from time to time. Early studies were predominantly concerned with basic urban phenomena viz. urban growth and its trend, city size, urban hierarchy and morphology etc. But the current concern of researchers is primarily focused on some major basic problems having bearings on the quality of life of urban dwellers. The present study is also an attempt in this direction. It intends to examine the process of urbanization and its association with the levels of basic amenities. These types of studies are very significant in the context of developing countries, because they are passing through a phase of rapid urbanization unaccompanied by growth in basic amenities.

In this regard Salau (1985) has examined association between city size and quality of life in Nigeria. In his work, he classified Nigerian cities into three broad categories – large, medium and small. Salan argued that the level of living i.e. quality of life as reflected in the availability and level of basic amenities is directly related with size class of urban centre. Larger the city size better is the quality of life. The study also provides guidelines for policy makers and public administrators.

Oyebanji (1981) has examined such amenities like housing, amenities, education health and environment in the Nigerian cities. The author found that the quality of life is found the worst in the local government area of Ilorin city. Ilorin is one of the largest cities in Nigeria, and is the capital of Kwara State.

Dandekar (1998) has argued that resident location plays a very important role in determining the quality of life in an urban setting. The quality of municipal services
pertaining to safe drinking water, sanitary condition, safety, health services and
education facilities much depends on where one lives.

Singh (2001) in his study on urbanization pattern of world with especial
reference to the Indian scenario has highlighted that the degree of urbanization has
been more rapid in a few larger urban centre. The rate of growth in population of
medium and small towns on the other hand, has been slower. This rapid and
imbalanced urban growth has resulted into numerous problems related to scarcity of
amenities. This, call for a proper planning intervention to ensure better civic amenities
like safe drinking water, improved sanitation, electricity and housing to maintain
quality of life in deteriorating cities.

Mahadevia (2001) in her work has argued that urban poverty and basic
services are of prime importance in urban India. A proper planning in this regard will
not only lead to improvement in quality of life but will also be instrumental in
reduction in urban poverty. The author argues that the availability of these services
varies according to size class of the cities and the levels from state to state. Large
towns have higher proportion of population having access to these services than the
small towns. Only exceptions are some lower order towns which enjoys some special
status. She also argues that the availability of such services is higher in developed
states and vice-versa. Hence, the coverage of basic facilities in the urban area depends
on the economic base and performance of city as well as the levels of economic
development of the state in which the cities or towns are located. While examining the
approaches of the programme launched by the government for improving the access
of urban poor to land and basic services, the author comments that the policies are
moving towards system that doesn’t favour the poor.

Nayar (1997) has examined the availability of basic services particularly
sanitation facility. According to him sanitation facility is said to have important
bearings on the health condition of people, more so in the urban areas. It is in context
that inter-linkages between the two become an important issue for investigation. The
analysis is based on the data on housing condition collected by from National Sample
Survey Organization (NSSO) in its 44th round for 10 states. These are Karnataka,
Tamil Nadu and Kerala from the South, Maharashtra and Goa from the West, West
Bengal and Orissa from the north to represent the different pattern in term of quality
of life. He found that amenities are unequally distributed and not followed by any
systematic trend. In order to test the broad hypothesis concerning relationship
between housing amenities and health indicators he found a moderate to strong negative association between the two. On this, he concludes that although important, the availability of housing amenities alone could not explain the health condition. He has, however, stressed that they are important for improvement in the health condition of the people.

Daspattanayak (2000) in her work has investigated into the inter relationship between the process of urbanization and economic development in the state of Punjab and Orissa representing two extremes with regard to level of economic development. Her study covers a period of three decades 1961-1991. Along with an analysis of the emergence of new towns and spatial distribution of urban centres, the study also examines the town wise growth and its relationship with socio-physical infrastructural facilities. She has found that there is a negative association between size and growth and growth of urban centres, on the one hand, and levels of almost all the infrastructural facilities.

Paul, et al. (2004) in their work have studied public services in India from a user perspective, and have offered a set of benchmark for future comparisons. The study is based on five services namely drinking water, health care, public distribution system (PDS), transport and primary education. Each service is assessed in terms of four dimension viz. access, use, reliability and user satisfaction. Using state level data the study has compared the performance of different states. The study particularly highlights the conditions of poor households in the less developed states with regard to the availability of these services. While examining the ‘satisfaction level’, the study found that one-fifth of households using public piped supply are fully satisfied with the adequacy of water.

Shaban and Sharma (2007) made a similar attempt, and studied water deprivation in India’s major cities. They argue that per capita water availability in Indian cities is much lower than the standard recommended by WHO and the Bureau of India Standard 1999. Further, the per capita availability of water in Indian cities varies from one socio-economic groups and area to another.

Kundu (1991) has examined the public agencies engaged in the production of basic amenities viz. housing, drinking water and sanitations and their ‘sensitivity’ towards the needs and paying capacity of urban poor. In the study he has also analyzed the growth, size and distribution of urban centres in relation to basic services using state, district and town wise data. In an earlier study he had argued that the basic
amenities have become increasingly difficult due to the reduction in public expenditure on urban development and social services. He pointed out that government investment in infrastructure and basic amenities have decreased over the recent years, and the disparities across the urban centre are likely to increase (Kundu, 1997).

In a similar attempt Chatterjee (2003) emphasized that the high rate of urbanization has put a severe stress on civic services in cities and towns. Amenities such as safe drinking water supply, hygienic sanitation and drainage facilities are mainly under pressure. He suggested that selective privatization should be adopted to save the cities and towns from becoming organized slums, because the conventional water, sewerage and drainage treatment as well as operation and maintenance (O&M) are no doubt very costly and the urban local bodies (ULB’s) are not in the situations to operate and maintain. He suggested a rational pricing charge of water and sewerage.

Misra and Mathur (1997) in their study remarked that urban management and development have become a critical issue in our national economy. Due to paucity of financial and other resources, our cities are seriously lacking in urban services, housing and infrastructure. This has adversely affected the quality of life of a vast majority of urban population. The authors have promoted the concept of ‘public-private partnership’ in urban development with special reference to housing and infrastructure to help mobilize more financial resources from private sector and promote a better management of urban development process. According to them, this will not only improve productivity through optimum utilization of all resources, but will also ensure access to urban services, housing and infrastructure by the underprivileged section of society.

Pathak (1995) emphasized the role of NGOs to provide water supply and sanitation services to support sustainability. He stressed that the government has played a major role in providing these services but water supply and sanitation sector cannot be handled effectively exclusively through government agencies alone. The grass root planning stressed in plan documents reflects the felt-needs of the community. The voluntary agencies are ideally suited to work as a link between the people felt-needs and the planning process.

Deverajian and Shan (2004) have provided an analytical and practical framework for using resources more effectively by making services work for the poor
people. They also focused on services that have the most direct link with human development mainly education, health, drinking water, sanitation and electricity using examples of service deliveries from India, South Asia and World.

Rathore, Ramanathen & Reddy (1994) working on provision of adequate drinking water to urban population in the cities of Jaipur, Udaipur and Bharatpur in Rajasthan. They have also highlighted the need of partnership between government agencies and NGOs. They also discussed how the problem can be solved through various policies regarding price, subsidies, technology and institutions etc.

Singh (2004) made an attempt to examine the status and problems related to basic services including water supply, sanitation, solid waste management, health etc. in the resettlement colonies of Delhi. For the purpose three resettlement colonies namely Trilokpuri, Dakshinpuri and Tigri were taken up for in-depth analysis. The study is based on the field survey of 300 household heads. The study found that there is no uniformity in the problems related to basic services amongst the different colonies, as well as between services in the same colony. Based on the findings, the researcher recommended the involvement of non-government organization (NGO’s) and people’s participation to improve the level of basic services. Coordination among the local government, NGOs and the people is essential to bring about an effective understanding between them so that instead of hindering each others functioning, they work in cooperation towards achieving better service provision.

Wishwakarma and Gupta (1995) have examined the organizational effectiveness of urban basic service programme in Delhi on the bases of 1500 sample households in 600 Jhuggi Jhopri cluster from five zones of Delhi. They found remarkable gaps existing and inadequacies of service availability that required the alarming attention. They looked into the problem with reference to three programmes under which services were being provided. They are Environment Improvement of Urban Slums (EIUS), Minimum Needs Programme and Site and Service Programme.

Shafi (1995) similarly in his work tried to trace the history of Delhi metropolis and focus how the mosaic of communities and quality of life is different for person living in different localities of the same metropolis. For instance, the quality of life of those living in imperial New Delhi is different and from those who live within the walled city of Shahjanabad. The indicators included to reflect the quality of life were: availability of safe drinking water, quality and quantity of food intake, shelter and delivery of basic services and facilities within the habitat and environmental
sanitation air and water quality, solid waste (garbage) collection and disposal etc. Shafi also examined the development plan of Delhi 1981 in metropolitan region context and called for planned development of NCR. He concluded that significant has been achieved so far, and the region has been strained of funds for developing its basic infrastructure.

Shaw (2005) evaluated the status of amenities in urban outlying area or outgrowth of cities, and found that outer area of cities have inadequate level of infrastructure services such as water supply and sanitation. These poor infrastructure services make life brutal for the people living in these parts of cities.

Bhargava (2001) examined the basic services with particular reference to metropolitan and large cities and remarked that these problems of urban India will assume unmanageable proportion in the new millennium and will manifest in acute scarcity of public utility services and infrastructural facilities.

Potter & Kumar (2004) in another example of a large city have studied the problems of water supply in NOIDA a NCR town. They found that the town receives water supplies from tube well dug deep underground. In fact the water reserves are excellent and more than adequate to meet the future demand. However, the quality of water is poor. Water is brackish in nature with a high degree of dissolved salts. Residents take water from Delhi at least for drinking purposes. People generally complain that their coolers, geysers and electric kettles corrode very quickly due to hardness of the water. The situation is very grim and deplorable for those who depend on underground water even for drinking purpose. During rainy season when sewage mixes with water supplies water borne diseases become common. These problems entail additional cost for living a normal life in the city.

Singh (2003) in his work focus on fast urbanization in Uttar Pradesh and found that after 1950s (1951-1991) the urban population grew more than three times and the concentration was more in metro cities and the peripheral areas of cities. On the linkage between rapid urbanization and level of basic amenities like water, sanitation, road etc. in varying size of towns, he suggested that there is an imperative need of checking the fast growth of urbanization in order to ensure at least a minimum level of basic services.

Jaffer (2002) in his work focused on water supply and sanitation services in Lucknow city, which now has recorded a rapid growth during the recent past. The city needs special attention. He predicted that after ten years drinking water would be so
short in supply in the city that people might be forced to buy it like wine pouches. About sewerage he added that above 75 percent of the houses in Lucknow city are not connected to the sewerage and the nali water is mainly delivered to the open land. Thus, there is an urgent need for financial support and improvement in basic development scheme. He suggested some policy guidelines to improve existing scheme for a healthy environment to Lucknow city.

Subramanian (2002) in his work highlighted the level of overcrowding in Channai city. According to him this overcrowding has created pressure on land resulting in inadequacies and absence of basic amenities in the city. He emphasized that such amenities as water supply, toilet bathroom and road make very important and basic inputs for quality housing, and without these facilities, life would be inhuman and brutal.

Likewise, Mehar (2003) examined the situation in Rourkela steel plant and remarked that the growth of industries in the region followed by increasing urbanization has adversely affected the ecosystem. There has been a reckless exploitation of natural resources such as land, water, mineral and forest etc in wake of a rapid expansion. The region around the city of Rourkela has suffered from large scale environmental pollution and ecological degradation. The industrial city has failed to maintain and develop basic amenities for urban resident. Excepting the supply provision of potable water and the facilities for higher and vocational education, the availability rate of all other basic amenities in the city has registered a significant fall over the year the recent past. The distribution of basic amenities in various localities of the steel township is marked with great amount of unevenness. The situation is far worse for those residing outside the steel township. The civil town area, localities like Udit Nagar of the city and the area of Sectors 7 and 8 Panposh are well developed and better served with basic amenities than the old residential localities like Onanon Para, Kumbhan Para, Gandhi Road Plant side road etc.

Dandekar and Sawant (1998) have studied the problem in Pune city and their work is based on a survey of 1515 households of three localities. Pune is the 8th largest and one of the fastest growing metropolises in India. Their main focus was on the three localities namely Dahanukar Colony, Jai Bharani Slum and Gaothan suburb. They found that one fifth of the household do not have access to basic amenities such as water, sewerage, drainage and electric connection. With regard to the quality of
housing, the shopping centre, city services and quality of life. They observed that the situation is not as bad as in other metropolitan cities.

The situation however, is indeed very bad in some of the fast growing industrial city in north India. Mulkh Raj (1995) in a work on Kanpur City found that due to rapid population growth there is a serious shortage of all basic facilities, and the living condition of the people has drastically deteriorated. He has estimated that nearly 60 percent of city population lived in slums, and on an average 10040 person live in each slum. On the top of this only six slums have piped water supply through 64 stand posts serving a population of 1.37 lakh persons. Even these stand posts are of little use to the residents because of water shortages. As an alternative the people often use water from unhygienic sources. This is not all. The sanitation facilities are totally inadequate. Sixty percent of the slum dwellers go for open defecation (over 2.4 lakh persons) posing health hazard to themselves as well as to all the other city dwellers. As regard the functioning of Mandals (a mandal is a registered society with slum dwellers aged 18 and above members) he found that they are not able to solve the problem of slums and as a consequence they are loosing their credibility very fast.

Dass (1996) has made an attempt to study the recent growth of urban slum and availability of some basic amenities in Surat. His study is based on data drawn from a complete enumeration of households and population living in the slums. Dass remarked that slum in the city is growing very rapidly at an annual rate of 14.6 percent as compared to 7.8 percent for city as a whole. The data collected on the condition of basic amenities in the slums reveal a dreadful picture. In the city as a whole the extent and condition of public utilities and services is dismal with poor sanitation, lack of drainage, choked gutter, un-cleared filth and increasing pollution. The hutment areas are obviously worse with as high as 60 percent of them having no gutter or drainage system. The quantum of water available in most of the localities is highly inadequate. The slum households in different part of the city vary with respect to their dependence on, and the degree of use of, public stand post, hand pumps, private taps, wells, tapes in the adjoining localities, pipelines passing through road, factory etc. for drawing drinking water. As high as 46 percent of the slum households depend on public stand post and 22 percent on hand pumps for drinking water. About 19 percent of them have their own taps while another 7 percent use private taps shared by many. Two percent of the total households collect drinking water on payment from nearby colonies. Considering taps in working condition, altogether there are 409
public stand posts in the slum localities of the city with about 1139 taps in a more or less working condition. This on an average comes to about 1.4 of public water post per slum with 3.8 units of taps in working condition. Overall means that for about 1100 persons or 230 household there exists only one stand post and toilet facility is available for approximately every 21 persons or fifth households of slum. In case of electricity or lighting arrangement, a little more than half of the slum households in the city have access to electricity. However, a substantial proportion of them have only one light point. Out of the dwelling having such facilities, 48 percent have separate connection, 9 percent shared connections, 41 percent have connection drawn from their neighbor and nearly 1 percent are found tapping electricity directly from the pole. And for a population of 4.3 lakh slum dwellers there are a total of around 947 street lights, of which about 81 percent are in working condition. In terms of the number of individual with one unit of a working street light, for every 564 people or 122 households there exists one street light.

Vaidya (1995) examined inadequate access to basic services of the urban poor of Baroda metropolitan of Gujarat. He found that the percentage of annual municipal and non-municipal expenditure on water for the poor is low as compared to the non poor households. However, poor households are spending lot of time for collection of water. Women and children are mainly engaged in this activity. If opportunity cost of time spent for water is included in the total expenditure then it works out higher than the comparable non poor households. In the study, the author also calculated WTP (Willing to Pay) for water and sanitation, and found that there is no major difference between poor and non poor household for those basic services.

In another work Vaidya (2000) focused on the issue of approach pricing and cost recovery from the water supply and sanitation services. The past policies for pricing of water and investment planning often do not capture willingness to pay for water services. The major concern of the study was an understanding WTP of these services by using recent methodical ideas with contingent valuation method and measure compensating investments, to assess WTP for such services in urban India.

Bajpai and Bhandari (2001) in their study relate the need for investment in water supply infrastructure with the requirements and economic capabilities of the urban households. In the process they highlight the policy issue, and impediments in ensuring access to all. Gulat et al. (2004) in their work have highlighted water and
sanitation scenario in the country and various issues pertaining to improving access to the infrastructure services from the perspective of universal service obligation.

Srinivasan and Mohanty (2004) in their work have attempted to estimate levels of deprivation of basic amenities in reference to caste and religion by using NHFS data (1992-1999). They examined changes in the level of deprivation in four categories across states with reference to six component viz. type of house, adult literacy, electricity, drinking water facilities, toilet facility and presence of radio/T.V./bicycle in the household. A household which doesn’t have any of the above six necessities, it shows deprivation. Similarly, with one or two of them available, the family is considered in moderate category, with three and four it is said to be just above moderate and when a family possesses five or six elements it is better off. The study indicates that the level of deprivation has considerably improved in 1992-1999.

Galiani (2002) in his analytical work found that privatization of water services is associated with reduction in mortality rate by almost one-third in a case study of Argentina. The result shows statistically significant negative relationship between privatization and child mortality rate. He founds that child mortality fell by approximately 8 percent in the areas where water system were privatized. In addition, the privatization of water system does not affect mortality in those areas of higher income group.

Jalan and Ravallion (2003) in a study based on primary data for the period 1993-94 have indicated that access to piped water significantly reduces diarrhoea prevalence and duration. The study indicates that the families with high income level and educated women were healthier. The study also indicates that the duration of illness is reduced significantly if households have drinking water source within premises.

Bartlett (2005) in his work has highlighted the implications of inadequate provision of water and sanitation for children’s health and general development, especially in urban areas. The study in particular address issues related to higher vulnerability of children to sanitation-related illness, the link between unsanitary condition and malnutrition, the impact on mental and social development and the particular day-to-day realities of poor provision for children and their care given in urban areas. The author argues that health, education and provision of basic services have no alternative solution.
Srinivasulu and Haripriya (2006) have examined the status of child health in the light of drinking water quality and sanitation in Chrompet and Pallavaram townships of Tamil Nadu. They use ‘Probit Model and Cox Proportional Model’ on primary data and found that drinking water quality, nature of sanitation and kind of fuel used in the households significantly affect the child health. This necessitates a stringent regulatory mechanism to supply clean drinking water, as it is the poor who are most affected by water related diseases. Moreover determining the child’s health proper sanitation was also added into the indices.

According to Kurup (1994) access to safe drinking water and sanitation has been proven to be essential to good health. He argues that improvement in water supply and sanitation has played an important role in reducing the high level of mortality that prevails in many developing countries like India. His study was conducted in collaboration with the Kerala State Pollution Board (KSPB). He found that out of 150 wells as many as 144 did not qualify the quality norm of Bureau of India Standard. The pollution of ground water sources relate to high density of population, improved agriculture practices, industrialization, unhygienic garbage disposal system as well as lack of sanitary latrine. The study underscores an urgent need for effective planning.

Shaw (2007) has studied India’s urban basic amenities and the way they are linked to the achievement of higher level of human development. During the decade 1991-2001, at the national level, although there was progress in the supply of safe water, electricity and access to toilets to urban households, there was large variation in the pace of achievement across states and these became significant in the case of capital intensive and networked facilities such as tap water supply, electricity and closed drainage systems. The existence of such networked facilities in 2001 and their extension between, 1991-2001 was strongly correlated with a state’s per capita income. However, non-networked facilities such as water supplied through hand pumps and tube wells and the availability of latrine in house, show an improvement across the board covering even the poorest state. A state’s income, however, is not the only criterion to be considered important in examining basic amenities for even when income is the same there could be differences in the availability of basic services. The priority given to investment by state government in core urban services and their availability across towns of all size could vary resulting in differences as shown in the case of West Bengal and Andhra Pradesh. Urban literacy levels are also
important in understanding the predisposition of households to invest in a toilet in the home. The study also looked at the interrelationship between health and education and urban basic amenities. It was found that the level of literacy and infant mortality in 2001 in the states was significantly correlated with household hygienic level in 1991.

Kundu et al. (1999) in their work have experienced the level of inequity in the provision of basic services across the states and size categories of urban centre in India. They have argued that investment for the development of infrastructure and provision of basic services in the country has not been spatially balanced during the last few decades. More specifically, the state government and para-statal institution did not exhibit sensitivity in favour of small and medium towns. Given the resource crutch in the economy, they pointed out that privatization partnership arrangements and promotion of community based projects have become the only options for undertaking such investments.

Dave (1991) examined the levels of development of towns in Gujarat on basis of the select demographic, social and economic indicators with a particular focus on its relationship with city size. With regard to basic amenities, the study included such indicators as drinking water, latrine, bathroom, underground sewerage, garbage and electricity. In the study the author has found that higher order towns have higher availability of basic amenities and also reported higher development index. The study has also made a discreet use of quantitative methods to identify the less developed towns for the purpose of taking counteractive planning measures for a balanced urban development.

Misra (1998) examined Indian cities, which represents commonalities as well as uniqueness in evolution, growth, structure and development problems. He also observed that the problem of civic amenities and lack of resources are common to all cities. Mehar (1995), in his study has analyzed the process of urbanization and basic amenities in the Class-I towns in a relatively less urbanized state. He found that seven Class-I towns of Orissa have registered a very high growth in population in the post 1961 census period which seems to be mainly due to large scale migration of people from the countryside. This rapid growth has resulted in a breakdown of basic civic amenities in these cities. The civic bodies have failed to create additional basic infrastructure to cater to the need of growing population. The ecosystems of these towns are fast being characterized by large scale environmental problems.
Similarly, Singh and Singh (2002) in their work have emphasized on the rapid and unplanned growth of urban agglomeration which generate a series of negative environmental problems. The study also focuses on the state-wise status of sanitations in urban India and indicated that some states viz. Bihar, Orissa, Chhattisgarh, Karnataka and Tamil Nadu etc. are lagging far behind the national average and are thus witnessing deteriorating health and environmental conditions.

Kundu and Bagchi (1998) have examined the availability and status of selected infrastructure and amenities (water supply, toilets, electricity) in different size class of towns. In India rapid population growth and low investment in urban development have created a serious deficiency is towns and cities. They also studied the change in the organizational and financing system for the provision of infrastructure and basic amenities, and remarked that the state government should take the overall responsibility to ensure the basic amenities to all sections of population in different types of urban centres, irrespective of their affordability. In another similar study Kundu (2003) remarked that the high rate of urbanization and lack of basic amenities play an important role in the global economic era, and the deficiency in these basic amenities has resulted as a hurdle in attracting the private investment from within and outside the country. He also suggested guidelines to policy makers and administrators, and remarked that it is necessary to focus on such those type of issues.

Ray (2000) in his study emphasized that the rapid urban growth in India is major factor behind various social, economic and environmental challenges during the last few decades. The expending cities needed adequate infra-structure and basic services to maintain quality of life. He also suggested that good governance in cities will somewhat cope the problem of managing the growing urban centres.

Objectives:

In this view of high rate of urbanization and pensioning lack of basic amenities in the NCR-Haryana, the present study endeavours to analyze the urbanization process and basic amenity with especial reference of Bahadurgarh city. Under the following major objectives;

1) To study the process of urbanization in the National Capital Region of Haryana (NCR-H) in terms of its historical background, trends and patterns, class size distribution of urban population and temporal change therein.
2) To examine the levels of basic amenities in the towns of NCR-H, and their relationship with various demographic variables.

3) To examine the historical background, trends in growth of population, expansion in the Municipal limit along with a description of land use/land cover change, and other socio-economic characteristics of Bahadurgarh City.

4) To examine the availability of basic amenities in the select colonies of Bahadurgarh City.

Data Source and Methodology:

In geographical studies it is quite impossible to depend on only a single source for necessary data. Therefore, data for the present study have been collected from various published and unpublished sources of the Government. Beside, data have also been collected through primary survey with the help of properly constructed schedule.

The major secondary sources of the data are:

- Census of India
- National Family and Health Survey
- National Sample Survey Organization
- District Gazetteers
- World Development Reports
- WHO and UNICEF Reports
- India Human Development Reports
- Energy and Infrastructure Reports, World Bank
- International Energy Agency Reports

In addition the published and unpublished data for the study were obtained from the following government and semi-government organisations:

- District Country and Town Planning office, Bahadurgarh.
- National Institute of Urban Affair (NIUA), New Delhi
- National Capital Region Planning Board (NCRPB), New Delhi
- School of Planning and Architecture (SPA), New Delhi
- Urban and Regional Development Division, Planning Commission, New Delhi
- Indian Institute of Public Administration (IIPA), New Delhi
Most of the published statistics have been collected from census publications. The statistics of individual town have been collected from Town Directory, Part IX A, Series 8, Haryana, and from Town Directory, part IX A (i), Series 1, of India. Data were also collected from District Census Handbook, Part XIII, A & B. Data on basic amenities have been collected from a special volume of Census of India entitled Household Amenities and Assets, Series 1 and 7, Table H-12 A (E). In addition, data on amenities were obtained from various rounds of the National Sample Survey – for instance Round 50 (1993-94), Round 54 (1998-99), Round 55 (1999-2000), and Round 61 (2004-05) – and National Family Health Survey-III, Volumes I&II. Although, the map of Bahadurgarh city was obtained from the Municipal Committee Office, the land use/land cover map was generated from satellite imageries (Landsat TM: path 158, row 40, 18/5/1989 and IRS P-6 LISS-IV, path 101 and row 62, 26/June/2006). In addition, ground water related maps pertaining to depth and fluctuations of water table and ground water quality were generated with the help of data and maps provided by the Central Ground Water Board, Haryana. The present study is also based on information obtained from various newspapers, magazines and government authorized web sites.

Data obtained from the above sources were processed using suitable statistical techniques for the analysis. The following is the details of techniques used in the study:

**Growth Rate**

\[ r = \frac{(P_t - P_o)}{P_o} \times 100 \]

- \( P_t \) Population of Recent Decade
- \( P_o \) Population of Previous Decade

**Exponential Growth rate of Population:**

\[ P_t = P_o \times e^{rt} \]

- \( t \) is considered as time
- \( r \) is rate of growth
- \( P_o \) is population of the base year
Doubling Time:

\[
\frac{\ln 2}{\ln(1 + (r/100))} = n
\]

'n' is the doubling time (in years) and r is the growth rate (in percent per year)

For Population Projection:

❖ **Compound Annual growth Rate:**

\[
CAGR = \left(\frac{P_1}{P_2}\right)^{1/t} - 1 \times 100
\]

❖ **Extrapolation Method:**

\[P_3 = (2 \times P_2) - P_1\]

Mean Spacing:

Mean spacing (S) = \(2 \times \left(\frac{A}{n \pi}\right)^{1/2}\)

'S' is spacing in kilometres, 'A' is total area of district, 'n' is number of towns and \(\pi\) is a constant which is equal to 3.14.

Deprivation Index:

\[
D.I = \frac{Mx_i - O_{ij}}{Mx_i - M_{ni}}
\]

\(Mx_i\): Maximum value of \(i^{th}\) district

\(O_{ij}\): Value of \(ij^{th}\) district

\(M_{ni}\): Minimum value of \(i^{th}\) district
'Z' Score:

❖ Standard Score:

$$Z_i = \frac{(x_i - \bar{x})}{SD}$$

Xi: Value of observation
X: Mean of all value of X
SD: Standard Deviation

❖ Composite Standard Score

$$CSS = \frac{\sum Z_{ij}}{N}$$

Zij: indicate Z score of an indicator jth in district
N: number of variable

Correlation Co-efficient:

r = \frac{\sum XY - \frac{\sum X \sum Y}{N}}{\sqrt{\sum X^2 - \frac{(\sum X)^2}{N}}} \sqrt{\frac{\sum Y^2 - (\sum Y)^2}{N}}

t = \frac{r}{\sqrt{\frac{n-2}{1-r^2}}}

Analysis of Variance One-way Anova:

Between Samples = \sum p(x_i - \bar{x})^2 + n_k (x_k - \bar{x}_k)^2

Within Samples = \sum (x_{ij} - \bar{x}_i)^2 + \sum (x_{kl} - x_{k})^2

Total = \sum (x_{ij} - \bar{x})^2 \quad i = 1,2,\ldots \quad j = 1,2,\ldots

Degree of freedom

Between Samples = (k - 1)
Within Samples = (n - k)
Total = (n - 1)

Mean Square (MS) (This is SS divided by d.f.) and is an estimation of variance to be used in F - ratio

Between Samples = \frac{SS Between}{(k-1)} \quad F - ratio = \frac{MS between}{MS within}

Within Samples = \frac{SS within}{(n-1)}
For mapping land use / land cover of Bahadurgarh city, Survey of India; Topographical sheet no 53 D/15 on the scale 1: 50,000 and image of Landsat TM: path 158, row 40-1989 and IRS P-6 LISS-IV, path 101 and row 62-2006 are used. For change detection, satellite imageries of two time points as stated above are used. Moreover, data (of land use/land cover) and maps are generated with the help of ARDAS-9.2 (Array Repository and Data Analysis System) and ArcGIS-9.3 software.

In addition, some general technique and methods such as percentage, standard deviation, co-efficient of variation etc are also used as and when required in the study.

As stated already, the study is also based on a primary survey of Bahadurgarh city. For the survey purpose, the city was divided into two parts on the basis of the levels of development and growth. The inner part forms the old city while the outskirt represents the areas that were added to the municipal limits after 1990. Two colonies were randomly selected each from the inner and the outer parts. Dayanand Nagar and Ram Nagar colonies were selected from the inner part and Subhash Nagar and Patel Nagar from the outer part of city. Both these colonies have almost same number of households ranging between 200 and 250. A sample of 50 households was selected from each colony. Thus, a total of 200 households were surveyed with direct interview method. Five to seven households were surveyed from each street in a systematic manner, which ensured the coverage of the largest possible part of the colony. The questionnaire for the survey was divided into three major parts. The first part covered the aspect related to drinking water facility in city. Similarly the second pertains to the sanitation services whereas the third part provided coverage and problems related to electricity.

Organization of Study

The present study is spread over two major parts. The first part of the study highlights about the National Capital Region of Haryana and Indian scenario in general, whereas the second part of deals with Bahadurgarh city in specific.

Chapter-I is an introductory part which covers the conceptual part of urbanization and basic amenities in brief. A review of some of the important studies related to present problem is presented under the heading 'review of literature'. The details of data sources are mentioned in the section of data source and methodology.
The methodology part covers specific methods and techniques used in the study. In last the organization of chapter scheme is also part of the first chapter.

Chapter-II deals with a detailed account of geographical setting of the study area under main two titles – land and people. In the former, discussion covers administrative setup, lithology, temperature, rainfall, land use / land cover, ground water (depth, fluctuation and quality) and surface runoff. In the latter, issues like population change, population density, future scenario of population, and various socio-economic aspects such as literacy, sex ratio, health care facility, and working population, workforce structure, transport and industrial development etc are highlighted.

Chapter-III is devoted to the historical development of urbanization in NCR-H. In this chapter, an account of the process of urbanization in which de-classification, re-classification, emergence of new towns and changing structure of urbanization is also presented. In addition, discussion on patterns of urbanization and factor affecting urbanization also forms part of this chapter.

Chapter-IV provides a detailed account of the levels of basic amenities in India in general, and in NCR-H in particular. In this chapter attempt has also been made to establish links between levels of basic amenities in class size category of towns. Furthermore various factors which affect levels of basic amenities have been also discussed.

Chapter-V is devoted to Bahadurgarh city specifically. The chapter presents a detailed account of the study area in regard to its historical growth and development, its land use / land cover and changes therein, population growth and density, economic characteristics of population and availability of educational facilities along with a description of transport network and industrial activities.

Chapter-VI includes a detailed account of level of basic amenities in Bahadurgarh city. The chapter is based on data obtained from primary survey of 200 households of four selected randomly colonies – two from the outer part and two from the inner part of the city. The data were obtained with the help of well structured schedule in which issues like gender, caste, economic status were given due importance while examining the availability of basic amenities.

Finally Chapter-VII is devoted to conclusion and main findings of the study.