CHAPTER 3
METROPOLITAN CITIES IN INDIA

3.1 URBANIZATION IN INDIA

India’s urban population is expected to go up from 377 million in 2011 to about 600 million for the year 2031. This implies an increase of over 200 million in just 20 years. About 60% of the growth in the urban population in the past is due to natural increase whereas rural – urban migration has contributed to only about 20%. There is a concentration of urban population in large cities and existing urban agglomeration. The census of 2011 states that there are 53 million plus cities accounting for 43% of India’s urban population. The census of 2011 also notes that the number of towns in India increased from 5161 in 2001 to as many as 7935 in 2011. Most of this increase was in the growth of census towns rather than on statutory towns. A large number of towns are born in the vicinity of existing cities with million plus population. India’s urbanization, however is in smaller proportion as compared to other large developing countries such as China (45%), Indonesia (44%), Mexico (78%) and Brazil (87%). (Source - 12th Five year plan – Planning commission of India)

The main challenges as far as urbanization is concerned in India are the facts that there is an urban housing shortage of 18.78 million. According to the 2011 census, only 70.6% of urban population is covered by individual water connections compared with China (91%), South Africa (86%) and Brazil (80%). Duration of water supply in India cities is only between one to six hours. According to 2011 census, about 13% of urban population defecate in the open, about 37% are connected by open drains and 18% are not connected at all. The number of urban poor has increased by about 34.4% between 1993-2004. In so far as the urban transport is concerned, a Ministry of Urban
Development study in 2010 based on sample of 87 cities has estimated that in about 20 years time, the expected journey speed of major corridors in many cities would fall from 26-17 kmph to 8-6 kmph. The air quality has also deteriorated sharply carrying with it concomitant health costs. The per capita emission levels in India’s seven largest cities have been estimated to be at least three times than WHO standards.

Kumar (2002) studied the process of metropolization in the urban agglomeration across India and defines peri-urban in regional context as outgrowths. He looks on urban growth as an evolutionary process, and in that sense, the villages engulfed in the process of urbanization, referred to as “urban villages”, are already part of the urban agglomeration. The villages that are likely to be part of a city in one or two decades conceptually form the PUAs of the metropolis.

During his work under a DFID-sponsored project in the Hubli-Dharwad region, Brook (2003) emphasized that peri-urban interface is not primarily a location, although it has a place where it exists and it has a process. It includes flows of people, goods, finance, pollution, etc., which are a part of the process. According to him, there is no single satisfactory definition of peri-urban interface, and moreover different definitions will probably apply in different circumstances, and may even change in the same location over time.

Paul A. Jargowsky of the University of Texas argues that PUAs in India are heterogeneous because the social structure depends on proximity between higher and lower status persons, and the proximity does not threaten the social structure. Indian PUAs develop with more and less regulatory oversight. On the one hand, central authority is stronger and master plans are drawn up in the hope of directing peri-urban growth according to a logic that serves the interests of the broader area. The difference in legal/regulatory framework shapes the development of PUAs in important ways.
In India, argues Schenk (2004), many cities have attempted to control the usages of land surrounding their built-up areas. The urban development authorities have been founded to draft Master Plans for a rather long-term urban development through control of land uses and safeguarding their implementation. These authorities have often drawn up land use plans for residential and other functions in the urban fringes. The Bangalore Development Authority (BDA), in charge of all fringe developments around Bangalore, is an example.

The case study of Delhi’s pattern of population growth and outward expansion, informs Dupont, exemplifies the gaps between the ground reality of the peri-urbanization process and the administrative and statistical classifications.

3.2 ABOUT METROPOLITAN CITIES IN INDIA

In India, the Census Commission defines a metropolitan city as one having a population of over four million. Delhi, Mumbai, Kolkata, Chennai, Hyderabad, Bangalore, Ahmedabad, Pune, Surat and Nashik are those Indian cities that have over 4 million people.

For these million plus cities the Census definition of an urban agglomeration requires that it should be a continuous urban spread constituting a town and its adjoining urban growths or two or more physically contiguous towns together with adjoining outgrowths. There are 53 urban agglomerations in India with a population of 1 million or more as of 2011 against 35 in 2001. Each of such outgrowth may not satisfy the minimum population limit to qualify it to be treated as an independent urban unit but may deserve to be clubbed with the principal town as part of an urban spread. However, the definition of metropolitan areas adopted by the Planners in several cities however, much larger areas including villages, whether urbanising or
otherwise, but which are at the periphery or intervening in an urban agglomeration.

As per the preliminary results of the Census 2011, released by the Registrar General of India, Greater Mumbai with a population of 18,414,288 continues to be India’s biggest city, followed by Delhi - 16,314,838 and Kolkata- 14,112,536. These three cities are India’s mega-cities with 10 million plus population. But, when we consider Urban Agglomeration as an extended city comprising built up area of central core and any suburbs linked by continuous urban area, we have a change at the top. Delhi NCR, with the inclusion of Gurgaon, Faridabad, Noida and Ghaziabad becomes the No.1 Urban Agglomeration with a population of 21,753,486, ahead of 20,748,395 Mumbai Metropolitan Region comprising Mumbai, Navi Mumbai, Thane, Vasai-Virar, Bhiwandi and Panvel. Kolkata has clocked moderate growth.

The remainder of this chapter presents the experiences of peri-urbanization process of the metropolitan cities - Delhi, Mumbai Kolkata, Chennai, Hyderabad, Ahmedabad and Bangalore. Map 3.1 shows the location of these metropolitan cities in India.

3.2.1 Delhi

Following the promotion of Delhi as the capital of the British Indian Empire in 1911, the population of the city rose from 238,000 in 1911 to 696,000 in 1947, while quadrupling in area extent. After Independence, Delhi became the capital of the newly formed Indian Union and had to face a massive transfer of population following the partition. During the 1941-51 period, the population size grew from almost 700,000 inhabitants in 1941 to 1.4 million in 1951, corresponding to an annual growth rate of 7.5 per cent. (Map 3.2)

The overall demographic change in Delhi urban agglomeration conceals differences within the urban area. Between 1981 and 1991, the pattern of growth in Delhi was “clearly centrifugal” (Dupont and Mitra, 1995),
continuing the trend highlighted by Brush (1986) for the 1961-71 decade. An absolute fall in population size was reported in the historical city core, known as Old Delhi, as well as in some parts of New Delhi (the area corresponding to the new capital built by the British). On the other hand, the highest growth rate (above 10%) was recorded in the neighborhoods of the outskirts.

Map 3.1 Metropolitan cities studied in India
During the 1991-2001 period, these trends persisted. The depopulation of the old city area continued (−1.91% in 10 years). Population growth has also been very low in New Delhi (only +2.47% in 10 years), whereas the districts including the peripheral zones of the urban agglomeration have recorded higher decadal growth (for example, +62.52% in the north-east
district, +61.29% in the south-west district, and +60.12% in the north-west district).

The centrifugal pattern of population dynamics extended beyond the city limits. Population growth from 1981 to 1991 was faster in the “rural” peri-urban fringe of the capital than in its urbanized area – 9.6% per year as against 3.8% respectively (in the urban/rural limits as defined by the 1991 Census).

The slowing down of the population growth rate in the urban agglomeration of Delhi during the eighties as compared to the previous decades was not the result of a decline in the rate of natural increase. There was deliberate planning from the 1960s onward to develop towns on the periphery of Delhi to accommodate population growth; eventually these areas grew faster than the central agglomeration of Delhi. The urban sprawl has followed the main roads and railway lines, hence connecting the built-up area of the core city (Delhi) with that of the peripheral towns, leading to the development of a multi-nodal urban area.

The deconcentration of upper-class families in the rural fringes has created competition for land use, in particular in the southern agricultural belt where numerous “farm houses” have been built (Soni, 2000).

The construction of business and commercial centers has supplemented the development of residential complexes in this decentralized area, and the spatial expansion of the built-up area over largely spread zones is now combined with clusters of high-rise buildings in a similar way to the edge cities of the United States (Garreau, 1991; King, 2002). The scale of development schemes and the rapidity of transformation of this peripheral zone of Delhi has seen its rural components quickly shrink (Dupont, 1997, 2000). In the early years of development, the discontinuity of built-up area between the city and these residential quarters in the rural fringes was much more pronounced than today. The extension of the urban fabric and the increasing density of construction has altered the panorama, contracted the
rural space while encircling the village cores, and in the years to come these housing estates will be progressively transformed into a continuous suburb. This illustrates the difficulty in “demarcating urban and rural spaces” and in “distinguishing what is continuous suburb and discontinuous peri-urban” in a context of rapid urban growth common to numerous metropolises in the developing countries.

The processes that underlie urban development in the metropolitan area of Delhi contribute to an interweaving of urbanized zones and countryside, as well as to a blurring of the distinction between rural and urban population categories. This is especially evident at the fringes of megacities like Delhi. The continuous geographical expansion of the urban agglomeration of Delhi entails, first of all, a physical integration of urban and rural spaces through the incorporation of villages in the urbanized zone. The process of peri-urbanization and rurbanization around Delhi is also expressed by a functional integration of the metropolis and new residential neighborhoods established in the rural fringes, without continuity of built-up space. The daily commuting of the new dwellers in the rural-urban fringe between their decentralized housing estates and the centers of employment in the capital reflects the link of economic dependency between the different spaces.

The rapidity of the urbanization process in the “rural” hinterland also invalidates the pertinence for demographic or socio-economic analysis of the administrative limits of the Delhi urban agglomeration, despite their periodic redefinition. The rise of a transitional peri-urban type of area around the Indian capital further underscores the inadequacy of the dichotomous classification of human settlements in India and the need for the recognition of an intermediary category between rural and urban or rather the need to treat “the settlement system as a continuum that can, if necessary, be split into many categories”. (With extracts from the paper of Veronique Dupont, Population Dynamics and Settlement Patterns in Delhi’s Peripheries)
3.2.2 Mumbai

Mumbai Metropolitan Region (MMR) has an area of 4355 sq.km and a population of approx. 17,700,000 (2011 Census). The MMR consists of 8 municipal corporations, 11 municipal councils as for urban municipalities, and 995 village panchayats (rural local bodies). Its administrative region includes entire district of Greater Mumbai (consists of Mumbai city and Mumbai suburban district) and parts of Thane and Raigad districts. Population in Thane and Raigad districts has increased at a higher rate than that in Greater Mumbai in recent decades.

The entire area is overseen by the Mumbai Metropolitan Region Development Authority MMRDA, a Maharashtra state government organization in charge of town planning, development, transportation and housing in the region. (Map 3.3) In the late 1960s, regional development was considered a necessity to solve a multitude of problems faced by Mumbai. Therefore, a much larger region was integrated for planning in accordance with the establishment of Regional Plan. Raigad district is located in the southeastern part of the MMR.

The district is geographically subdivided into three parts as (1) coastal lands in the west, (2) Central Belt having a vegetation cover, (3) north-south running hilly areas and reserved forests of Sahyadri range. Panvel block is located in east-central Raigad. It is characterized by competition between agricultural and urban land use in the MMR region.

Prior to land use change analysis, MMR’s sub-regions were categorized into 8 zones based on the degree of urbanization using the following four indicators from census data: (1) density, (2) population growth rate, (3) number of employees and (4) number of regular farmers.
Mumbai, the economic capital of India, has been growing in terms of population as well as space. In 2001, the urban agglomeration of Greater Mumbai reached 16.4 million. In spatial terms, it is expanding on reclaimed land from the sea and eastward expansion in the mainland. The population
growth rate in the municipal corporation area has been declining during the past two census decades (from 44% during 1981-91 to 15% during 1991-2001). However, its periphery has been witnessing dramatic population increase and is still growing at a faster rate (63% during 1991-2001) as compared to the core area. This impressive growth is due to the development of new areas and projects by the City and Industrial Development Corporation of Maharashtra (CIDCO) in the east and the inclusion of peripheral towns such as Thane (with a population of more than one million) into the Greater Mumbai urban agglomeration area. This had special impact in terms of pressure on ecologically sensitive land, encroachment of open spaces, conversion of agricultural land, etc. The new areas often came up on reclaimed land, wetlands and mangroves affecting the flora and fauna of Mumbai.

At present, the land problem has become compounded due to urbanization and industrialization. The rise in land prices attracted brokers and agents, still is insufficient to move to urban area for the small plot holders. On the contrary, the wealthy people in urban area have begun seeking plots for their recreational activity, which has resulted in a number of farm houses and resort hotels all along the highway from Panvel to the villages. Landlessness also risks potential conflict among the landless and landowners in the community. Even if problems such as landlessness, small farm size and uncertain ownership encourage urban-rural linkages in terms of the flow of people, they weaken them in terms of the flow of agricultural produce from rural to urban areas and the potential of farmers to purchase industrial goods from urban areas. Thus, land shortages can have both positive and negative effects on urban-rural linkages.

The traditional modes of securing livelihood have been changing rapidly. The survey results on villagers’ main activities presents that employment in secondary and tertiary industry is now prevailing in the region, in contrast to the 1970s, when most of villagers were involved in farming and
fishing. Now Patalganga river and other branch rivers in the region have been polluted by the location of petrochemical companies. These factors considered, it may be said that urbanization has led to the diversification of rural non-agricultural economy.

In regard to the relationship with the superior urban centers, the main destination for out-migrants is relatively vicinal cities such as Panvel. The significance of Mumbai and Navi Mumbai as an urban destination for out-migrants is, however, negligible. This indicates limited employment linkages with the main urban centers and considerable potential role of town centers in rural livelihood. Hence, those centers and surrounding rural communities have to be undertaken inclusively through micro-level area-based rural-urban integrated planning that specifically takes into account socioeconomic variables and characteristics of the area. (With extracts from Minsun Kim, *Peri-urbanization and its Impacts on Rural Livelihoods in Mumbai’s Urban Fringe*, 48th ISOCARP Congress 2012)

### 3.2.3 Kolkata

Kolkata is now a happening city, facilitated both by external and internal factors. Its importance in the eastern India has always been immense. The hinterland of Kolkata extends much beyond and also to the neighbouring countries of Nepal, Bangladesh, and Bhutan. The Kolkata Port and the international Airport in Kolkata connect Kolkata to the rest of the world. The first spell of industrialization in the country had taken place in the areas in and around Kolkata and resultantly the traditional industries like jute, chemicals, engineering etc. were located in and around Kolkata. In terms of not only the manufacturing industries, but also the wholesale and retail trades Kolkata occupies a pre-eminent position in eastern India, primarily helped by Kolkata Port. Agglomeration of all these major economic activities here have rendered
Kolkata the character of a metropolitan city, which is by far the largest in eastern India in terms of demographic, social and economic parameters.

The total area (2011) of Kolkata is 1887 sq.km. It comprises 42 urban local bodies (including Kolkata Municipal Corporation) and 24 panchayat samitis (rural local self government units). Its population (2011) is 17,251,000 (Map 3.4)

Map 3.4 Spatial structure for Kolkata metropolitan area
Its Tertiary sector is bigger than the manufacturing sector and more than 80% of registered factories and employment of the State (West Bengal) are located in KMA. There is a strong presence of Engineering, Chemicals, IT and ITES industry.

Major tertiary activities are Trade and Commerce, Banking and Insurance, Real Estate, Transport (Integrated Approach Towards Metropolitan Planning: A Study on Perspective Planning for Kolkata Metropolitan Area, Premjeet Dasgupta)

A number of large and important infrastructure projects like North-south and East West Corridor under Golden Quadrilateral program, Kolkata Logistics Hub, West Howrah Township, Rajarhat Township, Second Vivekananda Bridge, Belghoria Expressway, Kalyani Dum Dum Expressway, West Howrah Township etc., are likely to create major direct impact on the developmental scene of KMA. The importance of KMA would continue to be significant in the context of various other factors. The Look East Policy of Government of India strives to enhance trade between India and other countries in the neighbouring countries. In implementation of this Policy, the strategic importance of Kolkata along with Siliguri cannot be underestimated. With China being targeted as a major trading partner of India, to be facilitated by resumption of trade via Nathula, freight traffic to Kolkata port is slated to rise considerably. Kolkata has already seen a spurt in real estate and service sector industries, especially IT & ITES industries. The IT&ITES industries have been growing at around 100 percent per annum.

The IT and ITES have opened up vast possibility of introducing e–governance in ULBs and also in management of infrastructure. The comparative edge of West Bengal in this area reinforces the possibilities. A number of steps in this direction have already been initiated by the ULBs. The municipal accounting system is undergoing a total overhaul.
Another major area of departure in the arena of urban policy has been that of enlisting private sector participation in infrastructure development and management. The State Government’s Policy on Infrastructure Development through Public Private Partnership (PPP) has been a notable step in this direction. The PPP Policy provides for participation of private sector in development and management of power, telecommunication, transport including roads, bridges, fly-over, waterways, ports, airports, water supply, drainage & sanitation, township & area development, housing & commercial complexes, recreational projects etc (Kolkata Vision 2025).

### 3.2.4 Chennai

Chennai Metropolitan Area [with latitude between 12_50'49" and 13_17'24", and longitude between 79_59'53" and 80_20'12"] is located on the Coramandel coast in Southern India and the land is a flat coastal plain. Three rivers viz. Kosasthalaiyar, Cooum and Adyar pass through Chennai Metropolitan Area. These rivers are placid and meander on their way to the sea. Buckingham Canal, a man-made canal, is another large waterway which runs north south through this Metropolis. Sholavaram lake, Red Hills lake and Chembarambakkam lake are the three large lakes in the Area. Chennai, formerly known as Madras situated on the shores of the Bay of Bengal is the capital of Tamil Nadu state. It is the fourth largest metropolis in India.

Chennai Metropolitan Area comprises the area covered by Chennai City Corporation (Chennai District), 16 Municipalities, 20 Town Panchayats and 214 villages forming part of 10 Panchayat Unions in Thiruvallur and Kancheepuram Districts. It extends over 1189 Sq.Kms, and has a population of 7.04 million as per 2011 census. (Map 3.5)
Map 3.5 Land use – Chennai Metropolitan Area

Founded in 1639 by Francis Day, an agent of the East India Company, Madraspatnam, the first English trading post of the East India Company and port of the Bay of Bengal, was a strip of sand 5 km long from north to south, and 1.5 km wide, where 7,000 inhabitants lived in 1639. This privileged
setting on the Indian Ocean explains the interest which it provoked in the colonial powers of the 17th Century. In 1901, the town (with an area of 70 sq.km) had a population of 5,40,000 inhabitants. Madras owes its growth, at the end of the 20th Century, to the modernization of its port and to new industrial activities (textile, tannery) located in some villages not far from the centre. The industries have developed along the great Northern railway track (between the train station and Ennore) and the Buckingham canal. From the 1920s, the city was already considered a commercial, military and administrative centre of the whole of south India. For this reason, it attracted a large number of migrants.

The urban agglomeration of Chennai experienced significant differentials in the growth of its core area as compared to its periphery. The Chennai city registered a growth rate of 11.1% as compared to 19.8% for the urban agglomeration area as a whole during 1991-2001 census decade. The rest of the metropolitan area (urban agglomeration area minus the city area) experienced a decadal growth rate of 41%. This is revealed by the highest growth rates of the whole urban agglomeration as compared to those of the Municipal Corporation area (the core area) alone: 2.23% per year as against 1.59% during the 1981-91 decade, and 1.70% per year as against 0.93% during the 1991-2001 decade.

The City is at the core of the metropolitan area and is the centre for all commercial and social activities as well as a living area for majority of the total population. Its structure approximated to a semi-circle with extensions in five main directions, the North, Northwest, West, Southwest and South. This is due to the fact that early in the development of the city, George Town and Harbour became the commercial centre of the City. Naturally all communication lines led to this centre and these in turn were linked with each other producing a radial and ring pattern of development. When the City grew, lands on the main arteries were much nearer in terms of time needed to reach
the centre than areas, which were away from them, and further expansion took place on these arteries. The economics of transportation has led to formation of development corridors the most important of which are on the west and southwest where, physical conditions were more favourable for development.

Schenk & Dewit say: Urban poor have invaded into the fringe areas, either 'voluntarily' or through eviction, as their inner city slums are demolished. They may find (more or less) serviced sites provided by local authorities for which they have to pay. They may also be dumped across the municipal border without any such provision as is occasionally the case in Bangalore.

Pushpa Arabindo, in her paper a “falling apart at the margins? Neighbourhood transformation in peri-urban Chennai” made study a empirical investigation of Chennai a metropolitan planning decisions and explore peri-urban spaces in developing societies with an examination of metropolis as new urban condition. She found out that there is social transformation in Valmiki Nagar, Chennai, but it was problematic in Neelangarai, both are core study areas. She concluded saying there is a need to re-examine peri-urban areas and their supposed conditioned of marginally both spatially and socially to a new light as they become geographical centres of complexity and contestation.

The interesting study of S.Chakravorty et al (2002)shows very well that in Indians metropolises, mixed industrial districts are the norm and industrial districts that cannot benefit from the economics of urbanization are unlikely to succeed. We can see that in Chennai, the clusters are of two types; first where factories and workers are both clustered, second where factories are clustered at locations separate form where workers are clustered. The second pattern is more common in Chennai, except for the leather sector where both factories and workers are clustered.
3.2.5 Ahmedabad

The city of Ahmedabad was founded in 1411 AD as a walled city on the eastern bank of the river Sabarmati, now the seventh largest metropolis in India. The urban agglomeration population has increased from 3.31 million in 1991 to 4.5 million in 2001. (Map 3.6)

Historically Ahmedabad has been one of the most important centers of trade and commerce in western India. The city was once famous as the ‘Manchester of India’ on account of its textile industry. It had as many as 66 mills employing a workforce of over one hundred thousand persons. It lies in the cotton belt of Gujarat, 552 km north of Mumbai and 96 km from the Gulf
of Cambay. It has three major industrial estates within its municipal limits. It is also a major industrial and financial city contributing about 14% of the total investments in all stock exchanges in India and 60% of the total productivity of the state.

The city is devoid of any major physical features except for the river Sabarmati, which is cutting the city into two parts: eastern walled city and western Ahmedabad on either side of its banks. The Ahmedabad-Mumbai Golden Corridor has long been recognized as an important development axis in western India. The city acts as a terminal rather than as an intermediate node in this linear influence. It has seven major roadways, one expressway and five rail networks. A new corridor between Ahmedabad and Pune has recently emerged, connecting the city to other metropolitan cities including Vadodara, Surat and Mumbai. All these factors have resulted in the axial growth of the region.

The area within the Ahmedabad Municipal Corporation (AMC) limits consists of:

- the traditional city center within the fort walls with relatively high-density development, large concentration of commercial activities and narrow streets
- the eastern sector accommodating large and small industries and low-income residential areas and
- a well-planned western sector with wide roads accommodating major institutions and high-income residential areas

Compared to other metropolises in India, Ahmedabad has a lesser degree of primacy, and urban population is spread evenly across other metropolitan and class I cities in the state. The AMC area is spread over 190.84 sq.km, the Ahmedabad Urban Agglomeration (AUA) area is about 350 sq.km and Ahmedabad Urban Development Authority (AUDA) area is 1330.08 sq.km. Spatial distribution of this population within the city over the
decades shows that up to 1981 most of the new population added to the city was concentrated within the old AMC limits itself, especially in the eastern part. Expansion of the peripheral areas began in the 1980s and has continued. Earlier only the eastern parts and particularly the eastern periphery registered faster growth rate, but since the 1980s even the western periphery has grown rapidly.

The greater Ahmedabad area has grown at a moderate rate. Growth rates have declined from 3.2% to 2.2% (compounded per annum) during the past two decades. However, the rates vary across different spatial units. The population within the AMC limits appears to approach a stabilization level. The areas adjoining AMC falling within AUDA limits have shown rapid growth. Gandhinagar is also experiencing relatively high rate of growth.

The population growth in the peripheral areas is more rapid than the areas within the city limits. This is partly due to the saturation of population within the city area and the consequent large-scale housing development in the peripheral areas. The contrasting spatial patterns observed in the eastern and western areas of AMC have extended into the peripheral areas in the same manner. The western part is experiencing more rapid growth than the eastern part. Rapid growth in the form of ribbon development along the Sarkhej-Gandhinagar highway is being witnessed during the 1990’s. These trends are likely to intensify further in the coming decades. It is also a noteworthy feature that the spatial expansion of Ahmedabad is largely contiguous and relatively compact. (With extracts from City Development Plan 2006-2012, Jawaharlal Nehru National Urban Renewal Mission, Ahmedabad)

The development in the peri urban areas of Ahmedabad is closely linked to transport routes. The city is growing radially. It is encompassed by the Sardar Patel outer ring road and the areas where the ring road converges with the National highways are being developed more rapidly than the others. This is suggested to be because constructing urban infrastructure along such a
route is very lucrative for real estate developers. Thus the idea is that growth and development are not uniform in all peri urban areas of Ahmedabad though the city is expanding radially. The relationship between rural distress, development and connectivity to the city are interlinked and connectivity to the city is considered one of the most important reasons for development in the peri urban areas.

It was suggested that there is a need for a long term pan geographic approach to planning and that it shouldn’t be ad hoc. At the same time there was an emphasis on the fact that the dynamic nature of the peri urban area should be kept in mind and that here must be provisions made for that. Further, this must be done by evolving mechanisms to actively involve the local people based on a needs assessment. And in making all the plans, environment must be a major concern. It was suggested by some of the interviewees that at present despite many efforts by many agencies in the peri urban area, there is a lacuna in addressing the environmental problems of these areas of Ahmedabad.

The idea is that the city limits are being drawn and re-drawn based on public and private real estate planning for commercial, housing and industrial purposes. And the fact remains that while there are several bodies working in parallel for many causes in the peri urban of Ahmedabad, there is a need to bring in more correlation among the various bodies and to understand the needs of the peri urban dwellers, thus making the planning process more comprehensive and inclusive. It was thus highlighted that there must be a conscious, concentrated and coordinated effort by all the stakeholders as well as the other agencies working in these areas to create a conducive atmosphere for all.
3.2.6 Hyderabad

Founded in the late 16th century on the banks of Musi River, the city is located in the central area of the Deccan Plateau characterized by hard rocky and undulating topography. Hyderabad metropolitan region is divided into three zones based on the intensity of economic activity and its interaction with the city: (a) “the metropolitan core” within a radius of 10 - 13 km from the core city, (b) “the peri-urban zone” up to 26 km radius and (c) “the rural hinterland” up to 64 km. (Map 3.7)

The Hyderabad Urban Development Authority (HUDA) was set up in 1975 to regulate urban development in an area of about 1554 square km extending far beyond the limits of the municipal corporation, which then covered 171 square km. The HUDA was visualized as regulatory rather than an executing agency and was expected to function independently of the state government. The jurisdiction of the HUDA now extends over an area of 1865 sq.km excluding Secunderabad Cantonment.

The decadal growth rate of Hyderabad Urban Agglomeration (HUA) was a high of 43% and 67% during seventies and eighties, respectively. But it came down to 31% during 1991-2001. Its population has gone up from 2.55 million in 1981 to 4.3 million in 1991 and to 5.7 million in 2001.

With about 5.7 million population (closely behind Bangalore) as per 2001 census, the growth of Hyderabad city has occurred at a much faster rate in the peripheries in the last couple of decades than in the metropolitan core. Accordingly, a number of new activities are emerging in the periphery with the active participation of both the state and the private sector. These trends have significant implications for land use, urban planning, and policies in the coming years. The city has also acquired national and international image in recent years with the growth of software technology and efforts by the state government.
Much of the spatial expansion in the last two decades in the HUA has occurred in the surrounding municipalities. These towns recorded a high growth rate of 71% in 1990’s as compared to only 18.7% by the core city. Several of these towns have been growing at high rates from eighties onwards.
Together, their share of population in the HUA has increased from about 23 to 30% while there is a corresponding decline in that of the core city. These towns provide a greater scope for demographic expansion since they account for a high proportion of the area of HUA, and are having relatively low densities.

A study based on remote sensing data revealed that the built-up area of Hyderabad city has increased by about 136% during 1973-96, that is from 245 sq.km in 1973 to 355 sq.km in 1983, and from 522 sq.km in 1991 and to 587 sq.km in 1996. The urban sprawl (built-up area) has occurred at an annual rate of 3.77% during 1973-83, 4.95% during 1983-91 and 2.37% during 1991-96. Agricultural land to the extent of about 128 sq.km was converted to residential, commercial, institutional and industrial purposes during this period.

It was also observed that the urban built-up area has increased from 49.3 to 62.4% of the total geographical area during 1988 to 1999. This built-up area has increased at a much higher rate (44.5%) in the surrounding municipalities than that in the core city (2.7%). There is an increase in the open space/playground/recreational area from 6.3 to 12.2 sq.km during this period. Though this appears as an encouraging sign, what is disturbing is that it is either the lakebeds or the parks that are converted into open spaces. The area under dense vegetation/plantations/garden has come down by 6.4% from 40.33 to 37.73 sq.km in the municipalities.

Whatever little area was under rain-fed agriculture in core city in 1988 has disappeared by 1999. The area under this category has come down by 45% in the municipalities. Much of this decline has occurred in the municipalities especially along the Old Bombay Highway and ‘Hi-Tec City’ area in Serilingampally, Kukatpally, Qutbullapur, L.B. Nagar and Rajendranagar municipalities. Forest categories do not exist in the core city area. There is no change in their area put together in the municipalities and they constitute only about 11% of their area.
There is a substantial decline in the share of wastelands (scrub land) from 20.1 to 13.4% and also in the barren rocky areas. It is significant to note that the area under water bodies (reservoir/tank) has come down by 8.6% from 22.79 to 20.84 sq.km. This decline has been steeper in the municipalities (12.0%) than that in core city (3.0%). The condition of drinking water facility in the peripheries of Hyderabad city presents a depressing scenario. The towns with lower figures for latrines also have high percentage of households with open or no drainage category. Even where toilet facilities exist to a certain extent, there are no proper drainage facilities. (With extracts from Ramachandriah, Demographic Characteristics, Changing Land Use and Basic Amenities in the Periphery of Hyderabad City)

3.2.7 Bangalore

Bangalore, now Bengaluru, is the capital of the Indian state of Karnataka. It is India’s third most populous city and fifth most populous urban agglomeration. The BMA covers a Local Planning Area of 1306 sq. kms and consists of 387 villages, 7 City Municipal Councils (CMC) and 1 Town Municipal Council (TMC). Bangalore is among the top 10 preferred entrepreneurial locations in the world. As a growing metropolitan city, Bangalore confronts substantial pollution and other logistical and socio-economic problems. (Map 3.8)

As one of the world’s fastest growing cities, Bangalore is experiencing a steady increase in population (3.25% annual growth rate). Its population is likely to be 10 million by 2021. The growth is spurred by the advantages conferred on the city by entrepreneurial and intellectual capacity incubated through a series of private and government actions. Besides, Bangalore enjoys a favorable climate, a high quality of life, a cosmopolitan ambience and social diversity. While the IT-based formal sector accounts for 15% of its economy, the informal sector contributes 60-70%. Bangalore’s advantages places it on the threshold of the status of an International City. A concerted effort towards
developing new functions, especially high-value service sectors, upgrading the city’s infrastructure including transport, public amenities and logistics, and provision of housing options within the larger natural environment will contribute to the city’s economic dynamism (Draft Master Plan 2015).

Map 3.8 Administrative unit – Bangalore
The area of the city recorded a significant increase by 92.1% and the population by 37.8% during 1991-01. The main victim of such expansion is the peripheral areas of the city as it has experienced uneven development and severe environmental problems with unique ‘rurban’ characteristics that is quite different from the city. Some of the characteristics are higher concentration of households with large household size, higher illiteracy rate, higher share of unskilled and primary sector workers, higher share of medical expenses as compared to the city, larger share of kacha or semi-pucca house structure, least water and sanitation facility, and almost no solid waste disposal provision and high concentration of slums and uneven city peripheral transport facility. The first and the foremost task required for planned growth of the city is to keep a complete account and control of the entire area annexed to the city and development of a realistic land use plan at least for the areas that are going to be annexed to the city and imposition of the same by the planning authority. This may require some alterations in the existing land use plan of the city to provide a holistic view of the entire city (Sastry, 2006).

Like any growing city, Bangalore has its share of concerns that need immediate attention. Provision of housing, civic amenities and alternate modes of transportation, protection of natural areas and supply of adequate infrastructure facilities are some of the concerns. Strategic planning with a focus on urban management and a clear definition and coordination of institutional roles is essential. (Sastry, 2006).

3.3 FINDINGS

The concentration of population towards metropolitan centres and its diffusion to their peripheries has resulted in many complex problems (Kundu et al 2002) such as land scarcity, inward and outward mobility of labour, economic, social and spatial segregation of population between the core and periphery. As the phenomenon of peripheral development is recent in India as compared to
western countries, less research is available in this field to explore and explain
the complexities of this process at the national or regional or city level. (Sridharan, 2006)

From the study undertaken in this chapter, it is evident that here is not
much in depth study taken place to find out the process of peri urbanization
and the causes, effects of the same. Only Centre for Social Sciences, Delhi
(Centre de Sciences Humaines) has taken up a research in the area of peri
urban dynamics.

Hence, there arose a need to study about the Peri Urban Areas and the
transformations taking place in the PUAs in India.

Therefore, Chennai Metropolitan Area (CMA) which is one of the
Indian metropolitan cities has been selected for the research.