

## **Unit 22**

### **Poverty**

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#### **Learning Objectives**

A study of this unit on “poverty” will enable you to

- define the concept of poverty
- describe the socio-historical analysis of poverty studies
- provide a theoretical framework within which poverty studies may be placed
- discuss the nature of urban poverty in general
- explain the nature of urban poverty in India
- discuss the process of globalization in the context of urban poverty, and family
- describe briefly the changing policy perspective on poverty.

#### **22.1 Introduction**

This study presents a sociological analysis of poverty, specifically focusing on urban poverty the theoretical framework emphasises the main approaches, which define poverty-the cultural perspective and the situational perspective. The study not only tries to understand simply the human reality of what it means to be poor, but also the central paradox of modern India, half a century of democracy, economic growth and constitutional commitment to social justice has not lessened the acute, mass poverty of the country. The first section tries to examine the socio-historical analysis of poverty

studies and research of poverty in India. The early studies of poverty in Britain and also in US focus largely on urban poverty. On the other hand in India much of the research on poverty in the period since independence was driven in by the concern for growth and development. Income and expenditure were considered to be better measures of poverty which relied on data provided by National Sample Survey (NSS). But several issues pertaining to urban poverty in India still lie unanswered. Therefore this study tries to expand its framework beyond the analysis of calorie consumption and include dimensions of well being other than nutritional intake like housing, health, education, impact of globalization, access to basic amenities etc. and it also tries to analyze the label of facilities across different regions. This unit also undertakes a systematic study of globalization and poverty as well as the changing policy perspective on poverty. The recent focus on poverty has shown that in individual countries poverty is caused by

- (i) Paucity of resources or by failure of economic development
- (ii) Failure of state
- (iii) Transition from state control economy to market based economy.

This paper attempts to first define poverty, identify poor geographical area and tries to carry out systematic investigation with an open mind to understand the phenomena of poverty and adjudge the strategies employed to combat it, which will help building a new theoretical perspective.

## **22.2 Poverty: A Definition**

It's a multidimensional phenomenon and caused by a variety of factors. Its manifestation also differs from context to context. There is no linear chain of cause and effect. It is an inter-related wave of economic, social, psychological, cultural and political factor which influence the occurrence and persistence of poverty. Real poverty may not be apparent and apparent poverty may not be real. Thus there cannot be a single strategy to eradicate it in different societal context.

At the conceptual level, poverty includes market based consumption (or income) as well as public provision of goods and services, access to common property resources and the intangible dimensions of good life. Such as clean air, dignity, autonomy and low levels of disease and crime. The proponents of the conventional approach argue that the

income and consumption measure is still the best single proxy for poverty since it can incorporate non market goods and services and wide range of other utility (clean air, democracy) and disutility (noise pollution) through “shadow prices” into a monetary equivalent that is easy to compare over time and across context. Their critics argued that common property resources and states provided commodities have usually been ignored in practice and consumption of non-traded goods has been underestimated. It is also questionable whether “Shadow prices” can meaningfully translate the different kinds of values that are embodied in non-market goods and services into monetary equivalents that are comparable. The poverty assessments (PAs) are country studies about poverty carried out by the World Bank as part of the new poverty agenda. By 1996 almost 50 PAs had been carried out, for some countries there is more than one assessment. There is also a little consistency in how the poverty line is established, even for the same country. Some of the P.As define the poverty line in absolute terms, some deflate household expenditure by average household size while others use expenditure per adult equivalent, such methodological inconsistency effectively defeats the purpose of collecting quantitative data, since one of the rationales for using quantitative data is precisely that they are comparable over time and across context.

### **22.3 Socio- historical Analysis of Poverty Studies**

Poverty studies go back to the late 19<sup>th</sup> and the early 20<sup>th</sup> centuries in Britain where they were closely associated with the beginnings of empirical sociology. The two great pioneers of poverty studies in Britain, Charles Booth (1840-1916) and Seebohm Rowntree (1871-1954), were both men of wealth who were guided by philanthropic motives. Their work did not enter the mainstream of sociological theory but influenced both directly and indirectly the development of the welfare state. The tradition of survey research initiated by Booth and Rowntree influenced later sociological enquiries, including the monumental work on poverty by Peter Townsend in the second half of the 20<sup>th</sup> century. Rowntree’s book *Poverty: A study of town life* (1901) was based on investigation in York. For Rowntree, poverty was a condition in which earnings were insufficient to meet the minimum requirements of a healthy and productive life. Nutritional data made up the core of his index to which were added data relating to clothing, fuel and other household

sundries in addition to rent. Rowntree(1941) published a second study 40 years after the first. He came to feel that a single, invariant and unchanging definition of poverty would not do justice to the social reality, which varied across space and changed over time. He may be said to have laid the groundwork for the ‘relative’ and ‘absolute’ conception of poverty. American studies of poverty have also concentrated on the city, and in recent decades more particularly on what is called the ‘inner city’. The distinctive feature of poverty studies, particularly by sociologist, in the US is the attention given by them to the problem of race. Poverty in urban America is highly concentrated among the blacks and other racial minorities. At the same time, there are poor whites as well as a black middle class. The sociologist William J Wilson (1987), himself a black has drawn attention to what he calls ‘the truly disadvantaged’. These in his view should be defined not so much in terms of race as in terms of a combination of economics, demographic and social characteristics such as joblessness, broken families, teenage pregnancy, out –of –wedlock births and violent crimes. The American anthropologist Oscar Lewis (1964), who worked in India and Mexico and among the Puerto Ricans in the US, popularizes the concept of ‘The culture of poverty’. His work has failed to stand the test of time. It has been criticized for being superficial, impressionist and subjective, and for diverting attention away from the roots of poverty in the economic structure of society.

## **22.4 Poverty: Theoretical Framework**

Sociologists, have not typically viewed the question of poverty and the poor solely in terms of income. While in the past several years sociologists such as Peter Townsend, S.M. Miller and Martin Rein have been drawn to the question of the poverty line. Sociologists have taken the determination of poverty as their point of embarkation. What the precise income level is in the determination of poverty has not been the question so much as is the matter of the effect of that determination. Most sociologists have viewed poverty within the framework of social problems and have concerned themselves with the causes and effects of poverty, primarily by studying those who have been designated as poor. Others have argued that the sociologist study of poverty and the poor must also encompass the study of those who make the determination of poverty. The fact that the criteria used in the determination of poverty are not uniformly agreed upon

by economist and moreover until recently, rarely been of major concern to sociologists presents us with a number of important problems in examining sociological perspective of poverty. One serious problem is that it is very often difficult to ascertain whether sociologists are referring to the same population. Are 'the poor' discussed by one the same as the 'the poor' discussed by another. What of lower class, working class? One is forced to examine the context of the discussion and determine from that context whether or not the various studies are referring more or less to the same population. For the sociologist this determination rests upon the understanding that he or she is not actually defining the poverty level or the size of the poor population: others –economist, policy makers etc, have already done that. The second related difficulty with an examination of poverty and the poor is that the very term 'the poor' often obfuscates the fact that there are often different types of poverty and poor, even within the same society at the same time. Two major theories that have described poverty are:

### **1. The cultural perspective**

Since the 1960 it has been fashionable to speak of a 'culture of poverty' in U.S. This term, coined by Oscar Lewis and popularised by Michael Harrington, draws from one of the two major sociological conceptualisations and explanations of poverty in American society. It refers to the lives of the poor or at least many of the urban poor not only economically, but in many other respects as well. They being different or deviant with respect to a whole set of pattern of behavior, it is suggested, sets them apart basically from the rest of the society. According to the cultural perspective on poverty, the lower class is seen as manifesting patterns of behavior and values which are characteristically different from those of the dominant society and culture. Moreover, according to the culturalists, these unique patterns of behaviour and values are transmitted inter-generationally through socialization and have become the sub-cultural determinants of the lower socio-economic status of the poor.

### **2. The situational perspective**

In contrast to the cultural perspective, there is the alternative situational or structural perspective according to which poor are viewed in a very different light. Granting that the poor do manifest statistically unique pattern of behaviour, the situationalist argues that these derive not internally, generated by the unique values of the poor, but rather

externally, as the inevitable consequence of their occupying unfavorable position in a restrictive social structure. The poor behave differently not because they possess their own unique value systems. But on the contrary, because they possess their own unique value system, though they have internalized the dominant values but do not have the opportunity to realize these values through the socially sanctioned avenues. To loving about a change in so far as poverty is concerned, the situationalist argue, requires not changing the poor themselves, but rather changing their situation by correcting the restrictive social structure.

## **22.5 Poverty Studies in India**

Poverty studies in India have been preserve of the economists rather than sociologists (Bardhan and Srinivasan. 1974, Dantwala. 1973, Krisnaswami). They have been driven by the preoccupation with development planning in which economists have played leading part. The Planning Commission, set up soon after independence, played a leading part in initiating, stimulating and organizing the research on poverty. The cause, nature and eradication of poverty in India have been subjects of long debate. In the colonial period, the main pre-occupation of Indian writers on the topic was with the poverty of India. This was traced to exploitation by and unequal exchange with the imperial power. After de-colonization, the instruments of policy became national and the debate shifted inward to address poverty within India. This process of enquiry into conditions of poverty has been influenced by the government policies for the mitigation of poverty and inequality. Poverty reduction is a prominent objective of social and economic development in the Indian constitution, finding expressions in plans, policy statements and programmes. Poverty has long been recognized as an interlocking condition of assetlessness, underemployment, low-wages and incomes, proneness to diseases, illiteracy, gender, and economic vulnerability social disadvantage and political powerlessness. The condition itself is not sharply defined and enquiry into it has had certain distinctive preoccupations. These have varied from one phase to another.

The types of research studies on poverty in India can be classified into:

1. The early corpus of research in India has addressed the measurement of poverty, expressed in terms of a poverty line related to income or more commonly to estimates of consumption expenditure based on successive rounds of the National Sample Survey (NSS). The poverty line began life defined as a per capita monthly consumption of Rs.15 for the rural population or Rs.20 for the urban in 1960-61 prices (Planning Commission 1962). More recently this norm has been modified to the expenditure necessary to acquire a daily consumption of 2400 kilo calories in rural areas and 2100 in urban one (Planning Commission 1981). The poverty line is thus a concept closely related to subsistence survival. Research tended to focus on insights to be got from numbers, proportions, regional distribution and trends over time (Bardan and Srinivasan 1974) an influential argument related to the concept of the poverty line was also made for govt. action in the form of public works and employment generation programmes (Dandekar and Rath 1971). The analysis of trends in the incidence of both rural and urban poverty showed that it was characterized by fluctuations largely stemming from variation in agricultural output, which were the results of seasonal conditions. The proportion of people below the poverty line varied roughly between 40 and 50%, while absolute numbers of the rural poverty increased relentlessly.

2. A second concern has been more specifically with the breakdown of poverty by state or region (international labour organization 1977). Poverty studies at the regional levels also draw attention to inadequacies in basic needs fulfillments and to a whole host of specific macro-level features which are responsible for the incidence and perpetuation of poverty (Kurien, 1981 for Tamilnadu).

3. A third body of work has acted as a voluntary or co-opted vigilance force for the state and has critically evaluated the implementation and impact of Anti-poverty programmes, particularly those related to asset transfers and employment creation. These programmes appears to be characterized in the general run of such work, by inadequate scale, by narrowed reach down to the poor and by the proneness to waste, leakage and inefficiency inherent in bureaucratic delivery systems, exacerbated by lack of local participation.

4. In recent years research on poverty has branched off in a number of directions which go beyond the strict framework of the poverty line: exploring aspects of the

complexity of the condition such as the relationship between poverty and extreme events, ecological degradation, gender, age, caste and legal access; examining the conceptualization and experience of poverty of the poor themselves and carrying out participatory and action research (Chambers ed.1989).

5. Related to this, the fifth type of poverty research consists of micro-level research studies of small localities, villages and slums are no recent phenomena. They have rarely addressed themselves explicitly to poverty or to Anti-poverty policy. Instead in examining economic structure, be they agrarian or urban, micro studies have located poverty socially, sought to understand the textures of deprivation and explored the processes and relations which create and perpetuate it. Many of these studies are specific and counterintuitive.

Poverty studies in India have concentrated on counting the number of units—usually households or individuals—falling below a certain level of consumption expenditure or income. Amartya Sen (1973) wrote, ‘The Indian poor may not be accustomed to receiving much help, but they are beginning to get used to being counted. The poor in this country have lately been lined up in all kinds of different ways and have subjected to several sophisticated head counts.’ It was widely believed among planners, policy makers and the intelligentsia that economic stagnation was at the root of most social evils and that economic growth would be the engine of social transformation. But later it was realized that both within and outside the Planning Commission that high rate of growth might be accompanied, particularly in the short run, by an increase rather than a decrease in poverty.

## **22.6 Urban Poverty**

The emergence during broadly the same historical period of industrial capitalism on the one hand and democratic institutions on the other set in motion important changes in poverty. The demographic and social dislocations of the early phase of the industrial revolution probably increased the magnitude, the severity and the intensity of poverty. They certainly made poverty more visible, particularly in the industrial towns and cities where large numbers of labouring poor were to be found, in and out of ill-paid and insecure employment. They received scientific attention from those from writers such as



Engels and Marx and literary attention from those such as Charles Dickens. Even the first great sociological studies of poverty in Britain, those by Booth and Rowntree, were studies of urban poverty. The new economic order created not only great poverty but also great wealth. Industrial capitalism changed the spatial distribution of population. In rural societies based agricultural and handicraft, poverty tend to be dispersed. It tends to be concentrated in industrial societies., particularly in the early stages of industrilisation. There is nothing really comparable to the industrial slums spawned by early capitalism in even relatively poor and stagnant agricultural societies. As Engels (1973) put in his classic account of mid-19<sup>th</sup> century England:

**Reflection and Action 22.1**

Read on of the novels of Charles Dickens available in your local or Study Centre Library. Red it and then write an essay on the “poverty in England during the Industrial Revolution” basing on the description provided by Dickens in his novel.

Compare your description and analysis on poverty in England with those of other students at your study center.

Every great city has one or more slums, where the working class is crowded together. True, poverty often dwells in hidden alleys close to the palaces of the rich; but in general, a separate territory has been assigned to it, where, removed from the sight of the happier classes, it may struggle along as it can.

Poverty and overcrowding are the two most visible features of the industrial slum. Booth’s enquiry revealed the extent of concentration of poverty in the industrial and commercial capital of the world. A striking feature of his study was the use of maps showing the distribution of poverty in the city of London with different colours to indicate the degree of it street by street. It is not as if the territorial concentration of poverty or even the segregation of the poor was unknown in pre-industrial rural communities. India provides a classic example of segregation and exclusion prevalent since long before the advent of industrial capitalism. Detailed ethnographic studies have shown over and over again how certain sections of the village community, usually the

poorest, residentially segregated from and excluded from many of the common amenities of village life (Beteille 1965). Segregation and exclusion were governed by caste in India just as they were governed by race elsewhere, but poverty has a large part to play in these operations. Social disability and economic disadvantage went hand in hand in the past as they still do to a great extent. The studies by Booth, Rowntree and others were concerned with the social as well as the economic aspects of poverty. Income and expenditure were important, but other factors such as security of livelihood, disconnection from family and community and overcrowding, sanitation and health were also important. Sociological accounts of poverty tend to lack precision but they aim at a rounded picture. Individuals and families may suffer from a chronic sense of loss and deprivation even where there is an increase in their average earning and expenditure and poverty studies would remain incomplete unless they took some account of this sense of loss and deprivation. The early phase of industrial capitalism are marked throughout the world by large movements of population, from villages to towns and cities and across geographical and cultural regions. Although migration routes follow, even across large geographical distances, the ties of kinship, affinity and community, this does not always guarantee livelihood and security to the individual migrant. Economic hardship is often accompanied by social and cultural dislocation. The new settlements that emerge often have a makeshift character, and there is laxity in the rules for the regulation of conduct. Women and children become victims of new forms of social abuse.

## **22.7 Urban Poverty in India**

The acceleration of structural changes and poverty analysis is that, the level of urban is more closely linked with overall indicators of economic development than with specific indicators related to industrialization or urbanization. Indeed, the close correlation with level of rural poverty indicates that the two cannot be viewed separately. Given relatively high labour mobility, this is not surprising. Increasing level of urban welfare naturally pulls in job aspirants from rural areas if conditions there are much worse. Conversely, rural prosperity has its reflection in relative urban prosperity through generation of urban activities resulting from demand stimulation. It is also of some significance that the variance in rural poverty is much higher than in urban poverty. Urban activities are

essentially footloose- urban labour markets are probably more national in character than the rural labour markets. Moreover rural productivity is more clearly rooted in an immovable assets –land and hence less prone to greater variance between states. The rate of change in the employment structure has lagged far behind that of output and value added. Manufacturing activities have indeed grown apace but not perhaps fast enough. There is a clear evidence of an accelerating change in the employment structure also, contrary to the popular impression manufacturing employment and not the tertiary sector has been the fastest growing sector. There seems to have been a greater tendency of industrial dispersal up to the mid –1970 the subsequent. From the evidence it is difficult to argue that industrial dispersal had any significant effect on urban poverty removal- though the correlation of urban poverty and manufacture activity are generally in the right direction. The key regional pattern that emerges is really on east-west divide. The states with persistently high poverty level both rural and urban are Bihar, MP, Orissa, UP and Tamil Nadu. The advance states of West Bengal and Maharashtra are also exhibit high level of rural poverty. Thus the three traditionally advanced industrial states: West Bengal, Maharashtra, Tamil Nadu all exhibits high levels of rural poverty. As a result their urban poverty levels are also not low as might have been expected. What is of great interest is that Haryana and Punjab are found to be the most successful in all spheres and this have been achieved without large-scale industrial investment. Yet the growth in manufacturing employment is among the highest in these states including employment in household industries, which is generally declining elsewhere. The level of urban poverty is lowest in these states as well, non-agricultural employment in both rural and urban areas.

Along with all these changes, urbanization also accelerated significantly in these states. So the key to removal of urban poverty is agricultural growth. It is difficult to sustain high growth rate in manufacturing activity and employment without the accompanying improvements in agricultural productivity. In deed the magnitude of non-agricultural employment growth that is needed for poverty removal can only occur if there is adequate growth in agricultural productivity. The evidence from the older industrialized states is clear: poverty removal in these states is stymied by languishing hinterlands

despite high levels of industrialization and urbanization. The effect of accelerated agricultural growth would be most felt in the generation of non-agricultural activities both in rural as well as in the small and medium towns whose primary function is the service of their hinterland.

Big cities are then indirectly affected through operation of the labour market and through enhanced demand for their products and services from the small and medium towns. The decay of the eastern region emerges as the most significant problem. The strategy of locating heavy industries in the eastern and central states has had little beneficial impact in terms of poverty removal. Vast areas in Bihar, MP, Orissa, UP, Andhra Pradesh, Karnataka have very low productivity agricultural regions. Their levels of urbanization and industrialization are among the lowest in the world-along with some of the highest indices of poverty. Industrial dispersal in the absence of significant direct attack on agricultural productivity will do little to reduce urban or rural poverty in these areas. All the evidence suggests that the slow decrease in poverty in India has been caused by slow overall structural change. The fact that employment structure has changed much more slowly than that of value added suggest that the investment strategy has been wrong, being aimed at a dispersal of heavy and large industry rather than agriculture and light industries. A self-sustaining plan poverty removal in urban and rural areas can only be reached if the investment strategy is oriented toward a much more accelerated generation of non-agricultural employment.

**Reflection and Action 22.2**

Conduct a field study by visiting a nearby village or town or a municipal cooperation in a city where you live. Interview at least 10 people across different class and occupations, such as, wage labourers clerks, bank officers, administrative officers, etc. Ask them to give such information as amount of wages or salaries they get; how much they send per month on consumable items and how many a non-consumable durable items

Write a report on “Poverty: Reality or Perception” in about two pages based on your own assessment of the accounts gathered by you. Discuss the report with other students at your study center.

## **22.8 Globalization and poverty**

Under economic globalization, many countries have opened up their economies to free flow of finance capital, technology and goods. This has de established many of the - traditional industries and led to reemployment of productive resources. It has also led to the reduction in the role of the state and shift from welfare to a market friendly system of governance. In urban sector it has meant handing over the responsibility of providing certain basic amenities to the private sector under commercial framework. While this has been the case in all urban areas it can be seen more clearly in large cities. Further it has meant large-scale displacement or eviction of slums for allocating of more land for commercial and other profitable usages.

Although the process of globalization strong and often all encompassing, the local communities have continued to pursue is their own demand and agendas. In countries having a democratic polity like India, the conflicts and contradictions between the countervailing forces are more evident. In most of the less developed countries in the world rural poverty agenda has dominated the national policy debates and urban poverty is being neglected. Unfortunately, there is not much recognition of the fact that unless the process of urban industrial development is guided within a macro-economic frame work and if urbanization cases are not well managed, the deficiencies in the basic services such as housing, water supply and sanitation, etc are likely to acquire alarming proportions, which would jeopardize the survival strategy or the coping mechanisms of the urban poor.

Experience of Latin American countries, which underwent globalization in 1980 under external compulsions, shows that in several of these countries, urban poverty increased starkly. With it came up the problems of insecurity of property and life of the elite, group violence unhygienic living conditions and epidemics. Also the social structure got reorganized and there was an increase in female-headed households in the urban areas. Increase inequalities led to higher levels of relative poverty. The process of urbanization has not been healthy and has felt to promote balanced regional development in India.

After liberalization, new industries have often been located in the villages and small towns around the big cities, due to easy availability of land, access to unorganized labour market and less stringent implementation of environmental regulation. This has resulted in what may be described as “degenerated peripheralisation” where the pollutant industries and poor migrants are obliged to locate in the hinterland that have very poor quality of living. The smaller urban centres in the country are more rooted in their regional economy and thereby experience on an average low and unstable demographic growth. The few cities of which are emerging as global centres, on the other hand, exhibit high and steady demographic growth reflecting strength of their economic base.

## **22.9 The Changing Policy Perspective on Poverty**

Poverty in India has generally been seen as a problem of rural areas at the policy making level, as has been the case of many less developed countries. Official statistics supported this view until the 1980s, when urban poverty levels were about 8 to 10 % points below rural levels, irrespective of the poverty lines and price indices used by experts in their calculations. But the scenario has changed significantly in recent years. By the late 1980s the gap between the two poverty levels narrowed so much that the Expert group on poverty measurement, set up by the Planning Commission, reported a higher figure for urban than rural. In the 1990s though urban poverty levels have once again dipped below rural poverty, the rural-urban poverty differential in 1993-94 was narrower than in early 1980 or before. The Planning Commission using the controversial consumption expenditure data from the 55<sup>th</sup> round of the NSS for the year 1999-2000, the gap between the rural and urban poverty has gone up.

Table no. 1  
Trends in poverty in India

| S. No. | Year        | Number and Percentage of Poor |       |            |       |            |       |
|--------|-------------|-------------------------------|-------|------------|-------|------------|-------|
|        |             | Rural                         |       | Urban      |       | Combined   |       |
|        |             | No. (lakh)                    | %     | No. (lakh) | %     | No. (lakh) | %     |
| 1      | 1973-74     | 2612.91                       | 56.44 | 603.12     | 49.23 | 3216.03    | 54.93 |
| 2      | 1977-78     | 2642.46                       | 53.07 | 677.40     | 47.40 | 3319.86    | 51.81 |
| 3      | 1983        | 2517.15                       | 45.61 | 752.93     | 42.15 | 3270.08    | 44.76 |
| 4      | 1987-88     | 2293.96                       | 39.06 | 833.52     | 40.12 | 3127.48    | 39.34 |
| 5      | 1993-94*    | ----                          | 33.35 | ----       | 33.84 | ----       | 33.47 |
| 6      | 1999-2000** | 1932.43                       | 27.09 | 670.07     | 23.62 | 2602.50    | 26.10 |

Source: Amitabh Kundu and Darshini Mahadevia (Eds.). 2002. Poverty and Vulnerability in a globalising metropolis Ahmedabad, New Delhi.

In many Indian states, urban poverty is due to lack of economic development in others it is due to the nature of development itself. Urban poverty thus appears to be a complex phenomenon requiring serious attention of administrators and policy makers. It is often argued that urban areas do not need government support or budgetary resources to tackle their problems. People here have higher income level and can mobilize resources internally or receive investments from capital market. While the urban sector has indeed attracted more private sector resources, particularly since the launch of structural adjustment programmes, most of the investment has gone to commercially viable infrastructure projects. Funds for slum improvements have been extremely meagre. Given the political economy putting forward demand for transparency, discouraging transfer of funds across sectors. It is difficult for the local government to mobilize resources from rich areas within the city and cross subsidize civic amenities in slum colonies.

## 22.10 Conclusion

While in the late nineteenth century poverty in Britain was viewed mainly as a social problem, in mid 20<sup>th</sup> century India it was viewed as economic one, more specifically as problem arising out of economic backwardness. It is undeniable that economic stagnation and backwardness make the removal of poverty very difficult. It is very difficult, and this is particularly true when economic stagnation is accompanied by high population growth.

But poverty including absolute poverty persists even in countries that are economically advanced and have little population growth.

The assault on poverty in India has relied on four types of strategy: growth, redistribution, basic needs and direct-targeted programmes. This classification can be used to present a resume of performance. The long-term growth rate since independence has been 3.8 %, though this declines to 1.1 % after allowing for population growth. Growth however has been uneven over time, space and sectors of the economy. In this mixed picture, economic growth has at best constrained the spread of poverty and at worst has accentuated structural and regional inequalities. The redistribution of assets by means of land reform has been repeatedly proclaimed as a national objective, while responsibility for implementation has been vested in states. Ideological commitments to land reform have been weakened by the need to mediate between competing classes of beneficiaries (the land less and small peasant) and adjudicate between compensated and coerced redistribution and by difficulties in determining and implementing land ceiling. As a result, while 10-12% of cropland might be potentially available for redistribution. Basic needs provision did not await the initiative of either academic or international advocacy. Large proportions of the poor lived with few and variable 'minimum needs'. Their provision varies state- wise according to rural- urban location, gender and castes status. Minimum needs provision is neither decentralized nor is it directed at primary levels of deprivation. Direct programmes, the type of intervention have been related to the concept of target group. This concept itself has been derived from the poverty line which demarcates the technically (income or consumption based) poor and the technically not poor. The concept of the poverty line and of target groups are thus closely related.

### **22.11 Further Reading**

- Kundu Amitabh and Darshini Mahadevia (Eds.). 2002. Poverty and vulnerability in a globalising metropolis Ahmedabad: New Delhi: Manak Publication Pvt. Ltd.
- Atal Yogesh, 2002. The poverty question, search for solutions, New Delhi, Rawat publication.



## Reference

- Kundu Amitabh and Darshini Mahadevia (Eds.). 2002. Poverty and vulnerability in a globalising metropolis Ahmedabad: New Delhi: Manak Publication Pvt. Ltd.
- Razavi, Sahara (Eds.).2002. Gendered poverty and well-being: Institute of social studies: Oxford, UK: Blackwell publishers Ltd.
- Harris, Barbara, S. Guhan and R.H. Cassen (Eds.). 1992. Poverty in India, Research and Policy. Bombay: Oxford university press.
- Atal Yogesh, 2002. The poverty question, search for solutions, New Delhi, Rawat publication.
- Dube Siddhart. 1998. In the land poverty: Memoirs of and Indian Family: 1947-97. London and New York, Zed books.
- Williams, Karel. 1981. From Pauperism to poverty: London and Boston, Routledge and Kegan Paul.
- Waxman, Chaim. I. 1983. The stigma of property: A critic of poverty theories and policies, Rutgers university.
- Sen Amartya. 1992. 'Poverty and Affluence' in Amartya Sen's Inequality reexamine New York. Russel Sage Foundation, clarendon press Oxford.
- Beteille Andre. 2003. 'Poverty and Inequality' EPW. Vol-42, October –2004.

## **Unit 23**

### **Slums**

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- 23.5 Functions of slums
- 23.6 The Indian Context: Socio-economic Profile of the Indian Slums
- 23.7 Approaches to the Slum Problems
- 23.8 Conclusion
- 23.9 Further Reading

#### **Learning Objective**

After studying this unit you will be able to:

- describe the nature of slums
- give a brief history of slums
- outline the characteristics of the slums
- discuss the functions of slums
- describe the Indian context of slums and their socio-economic profile, and
- discuss the approaches towards solving the problem of slums in India.

#### **23.1 Introduction**

It is a fact that slum is basically an area of the worst form of struggle for the basic needs of life. The slum is the complex product of many products as it is true of many other social phenomena but poverty is the foremost one. It is interplay of objective economic facts and subjective group standards. Low-income forces people to live in slums. This paper presents a sociological analysis of the urban problems called slums, especially focusing on the various aspects such as nature and characteristic of the slum. In the first section this paper tries to examine the basic nature of the slum, which is not just an area of substandard housing condition, but it refers to the actual living conditions of the people in an urban area.

The characteristics of the slum has been presented under various subheadings like housing condition, overcrowding and congestion, poor sanitation and health, apathy and social isolation, deviant behaviour and the culture of the slum, that is, a way of life. In brief, this paper also tries to understand various functions of the slum, which met various needs and had served several useful functions for certain social groups like poor and migrant workers etc. under the section 'A brief historical perspective on the slum,' this paper traces the socio-historical analysis of slums starting from the slums of ancient Roman cities, the Jewish ghetto, British slums of 19<sup>th</sup> century to the slums of U.S before the World War-II. This paper also undertakes a systematic study of the socio-economic profile of Indian slums and also illustrates with a case study like Dharavi of Mumbai. The final section deals with various theoretical approaches related to the solution of slum problems. The most prominent ones discussed here are the traditional welfarist approach, the developmental approach, the Marxist or socialist approach and humanitarian approach.

The slums constitute the most important and persistent problem of urban life. They are the chief sources of crime and delinquency, of illness and death from diseases. Slums are of all shapes, types and forms. Mumbai has its packed multistoried chawls, New York- its Harlem and its East side, Chicago- its black belt, London- its east end. Families in Bangkok crowd together in 'Pile villages' composed of poorly constructed wooden shacks, bamboo huts and straw hovels along the small lanes of Kolkata, Dacca and Lagos, which stream with the high humidity and stink from open drains. Impoverished shantytown or squatter shacks constructed from junks cover the hillside of Rio de Janeiro, Lima, Hong Kong and other Asian, African and South American cities. Even the most affluent nation in the world have slums. At least one fifth of urban population of U.S lives in poor or sub standard housing. Like U.S, other capitalist nations of the world have slums. These nations have progressed on other fronts but the shelter problems have eluded solutions. Even in socialist countries where massive urban renewal programs have taken place and where private ownership of land does not exist, slums do exist. The developing countries or the underdeveloped countries, which have chosen the capitalist path of development, are often referred to as the Third World, where the trends of

urbanization since the Second World War have been interesting, instructive and alarming. Steaks of contrasts in all spheres of life characterize Third World. Some of these contrasts assume the form of contradictions. For instances, in Mumbai where perhaps some of the worst slums in the world can be found the skyline is getting changed by an eruption of skyscrapers of the most modern dimension, accommodating airline companies, five star hotels, officers of multinationals and the affluent few of the metropolis. The slum offends the eyes, nose and conscience but it exists all the same. We somehow learnt to live complacently with such contradictions, which eloquently proclaim our distorted sense of priorities. It would not be too sweeping to say that the slum has become an inevitable and expanding feature of cities in developing countries. Shelterless people grab every patch of vacant spot to pitch a makeshift shack. In Mumbai besides a few lakh who lives in slums and sleeps. In the streets, one can see tiny, shaky dwellings made of tin sheets, mud, wood, and rags even under the trees.

### **23.2 Nature of the Slum**

Slums may be characterized as areas of substandard housing conditions within a city. A slum is always an area. The term housing conditions refers to actual living conditions rather than mere physical appearance of the area. The substandard is to be taken not in an objective or technological but rather in a relative social sense i.e. compared with the recognized standard at a given time in a specific country. The cave dwelling of prehistoric people, the dugouts etc. of pioneers are all substandard according to our notion, but they do not create slum conditions. Slum word has a long and a negative connotation. It has been almost an epithet, implying evil, strange and something to be shunned and avoided. It is being apparently derived from “slumber” as slum were once thought by majority to be unknown, back streets presumed to be sleepy and quite. (The oxford universal dictionary.1995. New York, Oxford University Press)

There is a disagreement over whether people make slums or slums make people. Are substandard housing conditions due to social standards behavior of certain groups or vice- versa? The slum is a complex product of many products as it is true of many other social phenomena. But poverty is the foremost one, interplay of objective economic facts

and subjective group standard. Low-incomes forces people to live in slums. Slum residents are negligent and do not mind dirt. They have neither money nor time to their area clean or clean if themselves. Lack of basic infrastructure, like drains, drinking water, electricity and location gives the slums a very ungainly picture.

There are three main types of slums – (i) The first type is original slum. It is an area which from the very beginning, consisted of unsuitable buildings, these sections are beyond recovery and need to be razed. The example of this type is the Mexican slum in Wichita. (ii) The second type of slums consists of slums created by the departure of the middle class families to other sections and subsequent deterioration of the area. The example of this type is South End slum in Boston. (iii) The third type is the most unpleasant type of slum. It is mainly a phenomenon of transition. Once the area around a main business district has become blighted, physical and social deterioration spreads rapidly. This kind of slum teams with accommodation for the destitute, home of prostitution, beggars, homeless men, habitual criminals, chronic alcoholics etc. This type of slum clearly requires defines rehabilitation.

### **23.3 Brief Historical Perspectives on the Slum**

A study of ancient Roman ruins indicates the presence of slums in ancient times. In medieval times cities were so crowded that destitute people though small in number were kept out of the city. The Jewish ghetto was a unique type of medieval urban slum. Its uniqueness stems from an interesting and complex set of social, religious, political and economic factors that created a unified homogenous group which often lived for centuries, isolated from the rest of the society in slum like conditions. This situation deteriorated with increasing urbanization in Europe and U.S. The origin of the British slums during the nineteenth century as explained by Lewis Mumford (1990) is related to the industrial modern city and the factory system. Frederick Engels (1990) in his study of slum conditions in Manchester in 1844, the first manufacturing city of the world stated that the recent origin of slums belong to the industrial epoch.

So, after the industrial revolution, the poor were needed to work in urban factories. It was then the modern slum began to grow. The low wages permitted no decent quarters. And rapidly increasing industry multiplied the number of urban masses. Housing has to be provided and the tenements of the working class were made of poor material, rooms were small and low, baths were omitted, toilet facilities and water outlets had to be shared by several people. In U.S, the process of urbanization was quicker than in Europe, and low paid workers immigrated in masses. Big slums were essential phenomena of a few large cities. The invention of automobile the subsequent exodus from more centrally located residences, added to the deterioration of once satisfactory areas. Two World Wars, during which building activities were sharply curtailed, added to the slum problem.

### **23.4 Characteristics of the Slums**

Slums vary from one type to another, but certain general patterns of slums are universal. Although, the slum is generally characterized by inadequate housing, deficient facilities, overcrowding and congestions involve much more than these elements. Sociologically, it is a way of life, a sub culture with a set of norms and values, which is reflected in poor sanitation and health practices, deviant behavior and attributes of apathy and social isolations. People who live in slums are isolated from the general power structure and are regarded as inferiors. Slum dwellers in turn harbor, suspicions of the outside world.

Some of the features of slums are:

1. Housing conditions

In terms of the physical conditions and housing standards it is important to keep in mind the comparative nature of the definitions. A slum should be judged physically according to the general living standards of a country. Slums have commonly been defined as those portions of cities in which housing is crowded, neglected deteriorated and often obsolete. Many of the inadequate housing conditions can be attributed to poorly arranged structures, inadequate lighting and circulation, lack of sanitary facility, overcrowding and inadequate maintenance.

2. Overcrowding and congestion

A slum may be an area which is overcrowded with buildings or a building overcrowded with people or both. Density does not always result in unfortunate social consequence, the issue is primarily one of overcrowding. Congestion is again a judgment

about the physical condition of the building in terms of high density per block, acre or square mile. William. F. Whyte (1943) in his well known sociological study, Street Corner Society situated in Boston's north end, stressed upon the importance of overcrowding as a criterion for measuring slum conditions. Some slum areas like in Delhi, have 40, 00,000 people per square mile.

### 3. Neighborhood facilities

A poor slum is invariably associated with poor facilities and community services. Along with shabbiness and dilapidation, schools are of poor quality and other public facilities are often insufficient. Streets and sidewalks often go unrepaired and rubbish and garbage are infrequently collected adding to the undesirable environment. Shortage of water, electricity and sanitary facility are common in most of the slums.

### 4. Poor Sanitation and Health

Slums are generally been dirty and unclean places which is defined largely in terms of the physical deterioration, stressing particularly unsanitary conditions and lack of sufficient facilities like water and latrines. These factors have resulted in high rates death and disease. These factors have always been typical of slum areas where overcrowding and presence of rats and other pest complicate the problem of health and sanitation. In slum areas of developing countries, the rate of disease, chronic illness and infant mortality are exceptionally high.

### 5. Deviant Behavior

A high incidence of deviant behavior- crime, juvenile delinquency, prostitution, drunkenness, drug usage, mental disorder, suicide, ill legitimacy and family maladjustments have long been associated with slum living. It is a fact that vice may be found in slums but is by no means confined only to the slums. Due to the lack of money and power often slum dwellers are prove to be pressurized by the goons of upper classes to commit crime. It is a vicious cycle for the sum dwellers.

### 6. The Culture of the Slum- a way of life

Slums differ widely with respect to the social organization of there Inhabitants. They range from the slums in which the inhabitants are strangers to one another, to the family slums in which there is a wide acquaintance between the inhabitants.

Slums inhabited by immigrant groups may have a firm social organization. Culture might be defined as system of symbols or meanings for the normative conduct of standards, having three distinct properties. It is transmittable, it is learned and it is shared. The slum has a culture of its own and this culture is the way of life. This way of life is passed from generation to generation with its own rationale, structure and defense mechanism, which provides the means to continue in spite of difficulties and deprivation. It is the habits, customs and behavior pattern people have learned and which they hold that move them to act in a particular way. Although, these cultural patterns are typical of the slum, from ethnic groups to ethnic groups, from one society to society to another.

#### 7. Apathy and Social Isolation

Every residential area within the modern city tends to be socially isolated from others, partly by choice and partly by location. The slum is especially so, as it is inhabited by the people of the lowest status. The chief link with rest of the community is their identification with labour market, but there may be an additional link through politics. A slum also has an image in the eyes of the larger community. There is a societal reaction to slum dwellers. The non-slum dweller often associates the physical appearance and difficult living conditions of the slums with belief in the “Natural inferiority” of those who live in slums. This reaction has important consequences in the social isolation of slum dwellers and their exclusion, from power and participation in urban society. The slum dwellers often lack an effective means of communication with the outside world. Because of apathy, lack of experience in communicating with outsiders and their own powerlessness to make their voice heard. William. F. Whyte (1943) stated that although the north end slum studied in his work on street corner society was a mysterious, dangerous and depressing place to an outsider, it provided an organized and familiar environment for those who lived in it.

## 23.5 Functions of the Slums

The slums have met various needs and have served several useful functions for the slum residents. The most common functions of the slums have been to provide housing for the



lowest income groups and migrants in the city. The slums also serve as places where group living and association on the basis of villages, regions, tribes or ethnic or racial groups may develop. Whyte (1943) found an organized way of life in slums, which offered satisfaction to its residents. The slums also perform a function as a type of “School” to educate newcomers to the city. It gives them a place to become oriented upon arrival, to find first jobs and to learn the ways of city life. Another important function of the slum is that of offering a place of residence to those who prefer to live an anonymous life. Which includes migratory workers, criminals, chronic alcoholic and workers in illegal enterprises.

### **23.6 The Indian Context: Socio-Economic Profile of the Indian Slums**

The predominantly rural and agricultural nature of Indian society can no longer be called “A nation of villages”. Four fifths of India’s population presently resides in its half million villages. Today several cities of India are huge metropolitan areas and these cities have become centers of modern technology and the hope of future progress. Among the nations of the world, India is being increasingly judged by the stature and condition of its great cities, where lie the core of its commercial and industrial power and the strength of its transportation, distribution and communication system. The cities of India have played an important role in breaking away from tradition-bound social practices and from the cities most of the modernization processes in the country radiate. Political and social reform movements have largely originated in the cities and have then spread out.

A concomitant of urbanization in India has been in the continuous growth of slum population, as most internal migration has been concentrated in the slums. Slums have long history in India. The physical and social conditions of today in India slums are generally considered the worst. Although India is a large heterogeneous country who’s diversity often makes generalization difficult. Slum conditions can still be characterized in general terms. The streets, lanes and open drains in typical slum areas are filthy. The Indian slum, however, is far more complex than the mere aggregate of these appalling physical condition; it is a way of life. Rates of diseases, chronic illness and infant mortality remain high and there is little knowledge of health and sanitation, nutrition or

childcare. Illiteracy is exceedingly high and cultural and recreation activities are almost entirely lacking except those provided by such commercial enterprises as the cinema and gambling. Most slum dwellers are apathetic and suffer a great sense of futility. They have little community pride or even consensus, and they often blame the local authorities for their plight. They have become antagonistic towards them, seldom co-operating with municipal personnel in efforts to improve their immediate areas or the city as a whole.

A. R. Desai and S. Devadas Pillai (1990), in their work “Slums and urbanization” draw their attention to another significant feature of development postulates adopted by state, which has vitally affected the pattern of urbanization and type of urban living that is being created in the country. Our Constitution has laid down the right to property, which is basic and fundamental, but not the right to work or right to adequate housing, education and employment. The Constitution also proclaims certain freedom and rights to citizens viz. right to move throughout the country, right to life and security and freedom to search for earning and prerequisites needed for that search within legal limits but at the same time Constitution does not ensure the right to have resources for securing livelihood, source of earning, of adequate facilities for stay and other things essential, for mobile jobs for citizens to ensure a better purchasing power to live adequately.

The peculiar dilemma created by contradictory prescription by the Constitution, as well as the path of development, persuaded by rulers legally sanctified by the Constitution, have generated economic development. A small class of property owners is developing at the top, while at the lower levels vast growing section of property less citizens fending for their income for selling their skills and labour is emerging at an exponential rate. This pattern of class differentiation, income and asset concentration on the one hand and pauperization of a considerable section of the population driven to unemployment and under- employed state forced to resort to begging, garbage gathering and various types of legally non permitted are means of petty trades.

This class configuration, emerging as a direct result of government policies is creating a weird strante pattern of urbanization and urban living. On the one hand, there exists an

urban sector of rich with posh localities, residential areas glittering shopping malls, luxurious hotels, high style recreation centers as well as sophisticated educational and official complexes for a small minority of wealthy citizens. And on the other hand, urban areas it generates a majority of urban poor living in slums and involves a constant job hunting and income finding activities lacking adequate purchasing power. They cannot afford to secure shelter, amenities, facilities and services even for basic decent existence.

### **23.7 Approaches to the Slum Problems**

Some experts advocates the policy of slum clearance while others believe proving welfare services to slum dwellers. Still others stress providing greater economic opportunity for slum dwellers. All however have serious limitations as solutions either alone or together to the slum dwellers.

The traditional welfarist approaches advocate the policy of destroying the slums, tearing it down physically and redevelopment with subsidized housing. It is believed that providing welfare services to slum dwellers is the best way to bring about changes in slum areas and to solve the slum problems. This traditional approach to slum problems through clearance and redevelopment with subsidized housing has been criticized in its application to the developing countries. As the cities in underdeveloped nations raise their standard the poor people from rural areas flock to the city slums. The subsidized housing project will make cities more attractive and the number of poor rural people arriving in cities will become difficult to handle. So the only way to reduce urban slum areas is to raise rural living standard to those of a city. Slum clearance however is not exclusively a matter of replacing standardizing housing with new planned slums. In fact proper orientation of residents to a better and organized way of life and to the maintenance of the entire neighborhood it is essential, and this orientation requires the system of education and motivation of all the people, men and women, and children to the fundamental of personal hygiene, home management and environment sanitation. There is no question that measures to bring about improvements in economic conditions will be of great value to slum people. These includes more adequate wages, guaranteed minimum income, in- discriminatory employment policies, accessible and inexpensive

credit, programme to train and retain youths and adults, more effective training for certain occupation and improve social security and public assistance.

But there is another aspect of this welfarist approach to slum problems. Gita Dewan Verma (2000) has highlighted this issue in her work “slumming India”. She argues that the real problem is not the pervasive urban squalor that offends us all, but rather the moral and intellectual bankruptcy that sustains it. She states that for the urban poor minimal ‘landless’ options- outreach services instead of Hospitals, street education instead of proper schools, slum upgrading in the place of housing-all have become very fashionable. They are also one-way streets. Once all urban land is lost to less essential, more glamorous uses there will be no turning the slumming clock back. After all it is impossible that an IIM built on an excessive 200 acres of land or a new fangled cyber park or any of the plush farmhouses larger than the ceiling limits will be dynamited to make room for T.B. sanatorium or a municipal school or a low income housing project and if and when our welfare state happens to change its mind about what is needed for urban welfare and to stop urban slumming. According to her even competing interests in urban resources the state should make planned development a fundamental need of urbanites, calling for a high degree of responsibility on the part of those in charge of urban governance. In such a setup solution like clearing a few slums or building a few tenements for the poor will touch only the fringe of the problem, and it will take the existing social setup for granted. Urban renewal programmes based on this assumption are far from the real answer.

Urban community development offers a new developmental approach to some of the problems of urban areas in general and of the slums in particular. It involves two fundamental ideas:- the development of effective community feeling within an urban context and the development of self-help and citizens participation, of individual initiative in seeking community integration and change. In other words this approach relies directly on the slum dwellers themselves. If their apathy and dependence can be overcome and replaced by pride and a sense of initiative, the slum dwellers can make good use of solving their manifold problems. The approach to the problems of the city slums through urban community development involves the following elements:-

- (1) Creation of a sense of social cohesion on a neighborhood basis and strengthening of group interrelationship.
- (2) Encouragement and stimulation of self-help, through the initiative of the individuals in the community.
- (3) Stimulation by outside agencies where initiative for self-help is lacking.
- (4) Reliance upon persuasion rather than upon compulsion to produce change through the efforts of people.
- (5) Identification and development of local leadership.
- (6) Development of civic consciousness and acceptance of civic responsibilities.
- (7) Use of professional and technical assistance to support the efforts of the people involved.
- (8) Coordination of city services to meet neighborhood needs and problems.
- (9) Provisions of training in democratic procedures that may results in decentralization of some govt. functions.

There are four main objective of urban community development programme applicable to the slums are- (i) development of community feeling, (ii) self-help improvement of a person or a group by its own contributions and efforts and largely for its own benefits; indigenous leadership and cooperation between govt. and the people in the use of services. In 1958 Delhi pilot project in urban community development was launched with grants totaling \$170,539 from Ford foundation to the Delhi municipal corporation. (M.B.Clinard,1966) The Delhi pilot project represented both in philosophy and planning, a unique attempt to produce change in urban areas. In its over all objective of developing a programme, organizing communities, enlisting self-help, identifying and training local leadership and working out techniques of change, the Delhi pilot project appears to have been reasonably successful. Apart from some administrative problems, another major problem in such urban community development project is to device ways of keeping the original momentum of citizen's self- help organizations.

The Marxist and Socialist approach to the problem of slums clearly points out that

if only the land in urban areas is nationalized and removed from the orbit of market operation. (See A.R. Desai and S. Devidas, 1972). This single step, which does not require resources, but only breaking away from bourgeois norms of private property and legitimacy on remuneration to unearned income occurring to ownership, will remove half the problem of the urban areas by ending all activities that have developed around land as a marketable commodity. Abolition of private profit seeking agencies for constructional activities is another essential step for the solution of the urban problems especially slums. Only public assurance and provision of work to every able-bodied worker can provide the vast majority of non-propertied classes the purchasing power so necessary for survival. This assurance can be given only if employment in production, distribution and service is freed from market operation of capitalist competitive economy. An economy based on social ownership of the means of production and a social development that does not treat human beings as commodities.

### **Dharavi Slum: A Case Study**

The humanitarian approach to the problem of slums basically highlights the triumph of the human spirit over poverty. Kalpana Sharma (2000) in her famous case study “Re-discovering Dharavi-A Mumbai Slum” challenges the conventional notion of a slum. According to her Dharavi is much more than a cold statistic. What make it special are the extraordinary people who live there, many of whom have defied fate and an unhelpful state to prosper through a mix of back breaking work, some luck and a great deal of ingenuity. The story of Dharavi illustrates that the most important issue is security of tenure. If the poor people have that they will generate the funds and find ways to improve their own structure. Once the government launched programmes that guaranteed people security, they are willing to redevelop their areas or upgrade their dwellings. Even without aid from government, one can see how people have successfully replaced thatch and bamboo with brick and mortar. However they cannot do anything about the infrastructure that has to be provided by the state. The process and manner in which slums are reorganized or redeveloped have to be done in consultation with the people involved. NGO organization working with urban poor have long urged that women in particular must be involved in the planning and design to redevelop slum settlers. People

know what they need and they will be able to design something that is functional and can be maintained. There is enough evidence of dysfunctional “People housing” to suggest that a more often and consultative process is needed.

In Dharavi, there are already a few examples, like Rajiv Gandhi cooperative in Kalyan Wadi, which shows what is possible when a community is consulted on all aspects of slum redevelopment. The mainstream institutions of finance have rarely considered the needs of the poor. While Maharashtra government’s plan to provide free housing to slum dwellers is commendable because it recognizes the investments that most of them have already made in their housing. If financial institution can aid the poor in their housing needs, many slum dwellers would be prepared to part the way in financing their housing. This is particularly true of a growing segment of slum dwellers in Mumbai, who are making small regular saving. There are literally hundreds of saving groups in the city that have been putting aside a small amount each month for their future housing needs. Such a saving movement can be up-scaled if it is matched by the availability of formal housing finance. Places like Dharavi flourish because people find work. They attract people because they embody the spirit of enterprise and survival in the face of tremendous obstacles. Architect, Engineers and urban planners think of structures but do not address the life of people. As a result dream townships are planned which do not fulfill anyone’s dreams. Livelihood and shelter has to be seen as one rather than separate entities.

The economic determinant that culminated in the creation of existing slums are still at work however undesirable our slums may be, from a humanitarian viewpoint they do provide shelter to low-income families. If economic growth, full employment or lowering of discrimination towards job applicants should raise the real income of the majority of those living in the slums housing qualities would tend to improve.

## **23.8 Conclusion**

Slums in cities are the worst form of struggle for the teeming masses of people who cannot afford anything better. It is a remarkable, dilapidated, fragile structures which house a high density of population. Slums however, are not just physical housing colonies filled with dirt and disease but is; mentioned; a way of life. It is a distinct culture

where it is difficult to say whether people make slums or slums make people. In this unit you learnt about the characteristics of slums; the brief history of slums, different approaches to the study of slums. You studied about slums in India, different functions of slums and finally learnt about the famous slum in Mumbai city called Dharvi.

### **23.9 Further Reading**

Desai. A. R and S. Devadas Pillai. Eds. (1990). *Slums and Urbanisation*. Bombay. Popular Prakashan.

A.R.Desai and S. D. Pillai. (1972). *A Profile of an Indian Slum*. University of Bombay.

Verma, Gita Dewan. (2002). *Slumming India: A chronicle of slums and their saviours*. Delhi. Penguin Books.



## Reference

- Desai. A. R and S. Devadas Pillai. Eds. (1990). *Slums and Urbanisation*. Bombay. Popular Prakashan.
- Clinard. Marshal. B. (1966). *Slums and Community Development-Experiments in self-help*. London and Newyork. The free Press. Macmillian Ltd.
- A.R.Desai and S. D. Pillai. (1972). *A Profile of an Indian Slum*. University of Bombay.
- Sharma, Kalpana. (2000). *Re-discovering Dharavi-Stories from Asia's Largest Slum*. Delhi. Penguin Books.
- Verma, Gita Dewan. (2002). *Slumming India: A chronicle of slums and their saviours*. Delhi. Penguin Books.
- Dhadave M. S. (1989). *Sociology of Slum*. New Delhi. Archives Books.
- Bose, Ashish. (1985). "Urbanization and Slums, Important Strategies for the future". in Prodipto Roy and Shagon Dasgupta. (Eds). *Urbanization and Slums*. Delhi. Har Anand Publication.
- Whyte, William.f(1943) "*Street Corner Society*" Chicago, university of Chicago press.

# URBAN ISSUES IN INDIA

## Unit 24: Environment and Infrastructure

Anuradha Banerjee<sup>1</sup>

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### ***References***

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## **Learning Objectives**

After reading this unit you will be able to

- describe the process of urbanization and urban environment in India
- discuss the impact of urbanization on environmental quality
- explain the environmental infrastructure
- describe the policy perspectives on urban environment management; and finally
- describe the process of urban governance and highlight the nature of urban environment

## **SECTION I**

### **Introduction: Urbanisation and Urban Environment in India**

India is the second largest population giant in the world with current population of 1.03 billion (Census of India 2001). Of this, about 285 million people or 27.8 percent of the total population reside in the urban areas of the country. India in 2001 had 10.02 percent of the world's urban population and 21.10 percent of Asia's urban population. Infact, India's urban population is larger than the total population of small countries like France and Germany and larger than the total population of the big countries like Brazil and USA. Again it is larger than the total population of parts of continents like Eastern Africa, Western Asia and Western Europe; and larger than the total population of the whole continent of Australia.

The level of urbanization in terms of the proportion of urban population to total population is low in India, but the urban population in absolute terms is very high. Moreover, most of the urban population is concentrated in the Class I cities accounting for 65 percent of the total urban population and these cities are expanding at a faster rate than average population growth. A more disaggregated level of analysis reveals that the million plus cities or the metropolitan cities of India are growing very rapidly and their numbers have constantly increased from 12 in 1981 to 23 in 1991 and 35 in 2001. The total population of these metros accounts for nearly one-third of the total population and 10.5 percent of India's total population in 2001. Again, over 50 percent of the population of these metros live in the five giant conglomerates; Mumbai (16.3 million), Kolkata (13.2 million), Delhi (12.7 million), Chennai (6.4 million), and Bangalore (5.7 million). The population in these cities grew by 52 percent higher than the growth of urban population in India, but compared to the last decade, the pace of

metropotalisation has slowed down; and the 12 new cities grew at a faster rate than the existing cities, Surat recording the highest growth of 85 percent.

Rapid urbanisation marked by population explosion in the Indian cities can be largely attributed to the large scale rural to urban migration. Due to the uncontrolled urbanization in India, the **quality of life is under threat** particularly in the big cities. **Environmental degradation** has been occurring very rapidly and causing excessive air and water pollution, water shortage in water scarce regions, problems of disposal of solid and hazardous wastes, noise pollution, housing shortage and mushrooming of slums in most of the metropolises of India.

Today the social environment of the cities is also under threat. On account of peculiar problems like unchecked migration, illegal settlements, diverse socio-cultural disparities, uneven distribution of incomes, the phenomenon of **urban poverty** etc, the metropolitan cities are facing **increased criminal activities**. Organized groups, gangsters, professional criminals and even youth and juveniles find crime as a short cut for a lavish life in these cities. Moreover unabated population increase has also led to a **pressure on the existing physical and social infrastructure** of the cities like power supply, supply of potable water, urban transport, educational and health institutions.

Today, urbanization in India is characterized by unplanned and uncontrolled growth leading to urban sprawl. Landuse planning and the pattern of development, relationship between residential areas and industrial areas, commercial and office complexes have a considerable impact on the environment. Most of all, appropriate infrastructure provision has not kept pace with economic growth. Consequently, the **environment** of urban areas, particularly of larger cities, has been **deteriorating rapidly**. **Urban Local Bodies** (ULBs) in India are faced with a plethora of issues that directly impact their capacities to manage municipal service delivery while simultaneously addressing environmental concerns. These include:

- Multiplicity of organisations;
- Inadequate resource mobilization;
- Lack of capability to adopt proper corporate planning;
- Lack of information and information systems; and inadequate monitoring of policy implementation.

Where the municipalities are struggling to provide the basic amenities, to citizens, issues of environmental pollution of hazard management are not accorded priority till matters reach the proportions of a crisis.

## **SECTION II**

### **1. Impact of Urbanisation on Environmental Quality**

Due to increased human activities in the urban centers arising out of industrialisation and commercialization, there is a copious usage of water, energy and other raw materials, transforming them into goods and services and returning the wastes into the environment in the form of emissions and not usable solid wastes. Therefore the cities are becoming the major contributors to local, regional and global environmental problems.

The extent of resource use by a city can be captured by its “*ecological footprint*”. The term coined by the Canadian environmentalist **William Rees**, is concerned with defining the amount of land that is required to supply a city with food and natural resources as well as the area of growing vegetation required to absorb its carbon dioxide output (Rees, 1992). Rees described this as the “*carrying capacity*” of local and distant ecosystems – an approach that was later adopted by **Herbert Girardet** who was influential in drawing up the British proposals for **Habitat II** (Istanbul, Turkey, 1996).

He argued that while cities occupy only 2 percent of the world’s land surface, they consume as much as 75 percent of the world’s resources. In presenting his argument Girardet used London as an example to show how its “footprint” extends over more than 125 times the city’s actual area. One should, however, compare the ecological footprint of cities with that of alternatives. Possibly, it is not urbanisation per se that stresses the environment, but the **level of living** and affluence, and if combined with stupendous population growth, then the impact could be disastrous.

It has been observed that the large cities of poorer countries are growing at a much faster rate than similar cities in the developed world, and India forms no exception to it. Such a heavy and uncontrolled growth places a heavy burden on the environment and infrastructure. Resource shortages are intensified by ever increasing demands for services that need to be supplied at a rate, which often exceeds the country’s economic growth. The current status of environment and infrastructure of the Indian cities raises certain questions in our minds.

- How rapidly are we urbanising?
- What is the impact of rapid urbanization on environment, infrastructure and society at large?
- What should we do to make our urban system sustainable?

In order to address the first question, we should look into the picture of urbanization in India

### **Pattern and Trend of Urbanisation in India: 1991-2001**

The pattern and trend of urban population and the number of towns in India during 1901 to 2001 (Table 1.), shows that the total urban population has increased more than ten times from 26 million in 1901 to 285 million in 2001; whereas total population has increased less than five times from 238 million to 1027 million during the same period. A continuous increase has been noticed in the percentage of urban population from 11 percent in 1901 to 17 percent in 1951 to further 28 percent in 2001. In the same fashion, the number of towns has also increased from 1916 in 1901 to 2422 in 1951 and then to 5161 in 2001. This reveals the process of rapid urbanization in India.

**Table 1. Pattern and Trend of Urbanisation in India**

| <b>Census Years</b> | <b>Number of Towns</b> | <b>Urban Population (millions)</b> | <b>Percent Urban</b> | <b>Annual Exponential Growth Rate</b> | <b>Rate of Urbanisation</b> |
|---------------------|------------------------|------------------------------------|----------------------|---------------------------------------|-----------------------------|
| 1901                | 1916                   | 25.9                               | 10.8                 | --                                    | --                          |
| 1911                | 1908                   | 25.9                               | 10.3                 | 0.0                                   | -0.46                       |
| 1921                | 2048                   | 28.1                               | 11.2                 | 0.8                                   | 0.87                        |
| 1931                | 2220                   | 33.5                               | 12.0                 | 1.7                                   | 0.71                        |
| 1941                | 2422                   | 44.2                               | 13.8                 | 2.8                                   | 1.50                        |
| 1951                | 3060                   | 62.4                               | 17.3                 | 3.5                                   | 2.54                        |
| 1961                | 2700                   | 78.9                               | 18.0                 | 2.3                                   | 0.40                        |
| 1971                | 3126                   | 109.1                              | 19.9                 | 3.2                                   | 1.06                        |
| 1981                | 4029                   | 159.5                              | 23.3                 | 3.8                                   | 1.72                        |
| 1991                | 4689                   | 217.6                              | 25.7                 | 3.1                                   | 1.02                        |
| 2001                | 5161                   | 284.5                              | 27.8                 | 2.7                                   | 0.82                        |

Source: Census of India, 1991, 2001

### **Growth in the Number of Million Plus Cities in India: 1991-2001**

Table 2 shows that the growth in the number and population of the million plus cities in India during 1991 to 2001. There was only one million plus city (Kolkata), in 1901 in India that had increased to 35 in 2001. The total population had also increased in the million plus cities from 1.51 million in 1901 to 107.88 million in 2001; showing almost a fifty fold increase. The percentage decadal growth rate in the total population of million plus cities was noticed to be the highest (121 percent) during 1941 to 1951, which may be attributable to partition of the country. The percentage of total population living in the million plus cities had also shown a considerable increase over the years.

### **Population Growth Rate in the Four Leading Metropolises in India**

More than thirty fold increase has been noticed in the population of Delhi in 100 years, from 0.41 million in 1901 to 12.8 million in 2001, whereas, there has been twenty fold increase in Mumbai's population, from 0.8 million to 16.4 million from 1901 to 2001. However, Chennai has experienced more than ten fold increase (0.59 million to 6.4 million) in its total population during the last 100 years, whereas, Kolkata has experienced the lowest increase (less than nine fold) in its total population among the metropolitan cities in the last ten decades.

The maximum growth rate has been noticed during 1941 to 1951, highest in Delhi (90 percent), followed by Mumbai (76 percent), and Chennai (66 percent). However, Kolkata has recorded a comparative lower growth rate (29 percent) during the same period. This was the era of partition in India, when a huge influx of migration has taken place in big cities. After independence, Delhi experienced the highest decadal growth rate (close to 50 percent), in its total population in all the Censuses (1951 to 2001), followed by Mumbai where the growth rate was about 40 percent during those Census years. On the other hand Kolkata experienced continuous declining decadal growth rate from 1951 to 2001. Chennai has experienced a mixed pattern of high and low decadal growth rate during last 50 years.

**Table 2. Population Growth of Million Plus Cities: 1901-2001**

| Census Years | Number of million Plus Cities | Population in Millon | Percent Increase | Population of Million Cities as Percent of India's |                             |
|--------------|-------------------------------|----------------------|------------------|----------------------------------------------------|-----------------------------|
|              |                               |                      |                  | Total population in Million                        | Urban Population in Million |
| 1901         | 1                             | 1.51                 | --               | 0.6                                                | 5.8                         |
| 1911         | 2                             | 2.76                 | 82.8             | 1.1                                                | 10.7                        |
| 1921         | 2                             | 3.13                 | 13.4             | 1.3                                                | 11.1                        |
| 1931         | 2                             | 3.41                 | 8.95             | 1.2                                                | 10.2                        |
| 1941         | 2                             | 5.31                 | 5.71             | 1.7                                                | 12.0                        |
| 1951         | 5                             | 11.75                | 21.3             | 3.3                                                | 18.8                        |
| 1961         | 7                             | 18.10                | 54.0             | 4.1                                                | 22.9                        |
| 1971         | 9                             | 27.83                | 53.8             | 5.1                                                | 25.5                        |
| 1981         | 12                            | 42.12                | 51.3             | 5.2                                                | 26.4                        |
| 1991         | 23                            | 70.67                | 67.8             | 8.4                                                | 32.5                        |
| 2001         | 35                            | 107.88               | 52.8             | 10.5                                               | 37.8                        |

Source: Computed from Censuses of India

Initially, Kolkata was the most populous city of India till 1981, but Mumbai surpassed it in 1991 Census. Again, Delhi is expected to cross the population of Kolkata in the next

Census of 2011, if both cities will experience same pattern of growth rate. Thus, it is evident in Table Number 3, that Mumbai and Delhi metropolis are experiencing profuse growth in their population.

Thus the sharp increase in population in urban India, particularly in the metropolitan cities is particularly due to the scope for commercial activities, and significant job opportunities. Facilities such as health, education, infrastructure, for example roadways, telecommunications, airports, railways and ports are also better in metropolitan regions.

Thus the major changes that have occurred in India's urban scene in the post independence period are:

**Table 3. Growth of the Leading Metropolitan Cities of India: 1901-2001**

| Census Years | Mumbai | Growth Rate | Kolkata | Growth Rate | Delhi  | Growth Rate | Chennai | Growth Rate | India | Growth Rate |
|--------------|--------|-------------|---------|-------------|--------|-------------|---------|-------------|-------|-------------|
| 1901         | 81.3   | --          | 151.0   | --          | 40.6   | --          | 59.4    | --          | 2384  | --          |
| 1911         | 101.8  | 25.2        | 174.5   | 15.6        | 41.4   | 2.0         | 60.4    | 1.7         | 2521  | 5.7         |
| 1921         | 124.5  | 22.3        | 188.5   | 8.0         | 48.8   | 17.9        | 62.8    | 4.0         | 2513  | -0.3        |
| 1931         | 126.8  | 1.8         | 213.9   | 13.5        | 63.6   | 30.3        | 77.5    | 23.4        | 2786  | 11.0        |
| 1941         | 168.6  | 33.0        | 362.1   | 69.3        | 91.8   | 44.3        | 92.1    | 18.8        | 3187  | 14.2        |
| 1951         | 296.7  | 76.0        | 467.0   | 29.0        | 174.4  | 90.0        | 153.1   | 66.2        | 3611  | 13.3        |
| 1961         | 415.2  | 39.9        | 598.4   | 28.1        | 265.9  | 52.5        | 192.4   | 25.7        | 4392  | 21.6        |
| 1971         | 597.1  | 43.8        | 742.0   | 24.0        | 406.6  | 52.9        | 305.8   | 58.9        | 5482  | 24.8        |
| 1981         | 891.7  | 49.3        | 919.4   | 23.9        | 622.0  | 53.0        | 428.9   | 40.3        | 6833  | 24.7        |
| 1991         | 1259.6 | 41.3        | 1102.2  | 19.9        | 942.1  | 51.5        | 542.2   | 26.4        | 8463  | 23.8        |
| 2001         | 1636.8 | 29.9        | 1321.7  | 19.9        | 1297.1 | 37.7        | 642.5   | 18.5        | 10270 | 21.4        |

**Source: Computed from Census of India**

- Influx of refugees and their settlements, particularly in the urban areas of Northern India;
- Building of new administrative cities, such as Chandigarh, Bhubaneshwar and Gandhinagar;
- Construction of new industrial cities and townships near major cities;
- Rapid growth of metros;
- Stagnation and in some cases, decline of small towns;
- Massive increase in squatters and proliferation of slums in metro-cities and the dramatic changes in the urban-rural fringes
- Deteriorating urban environment – both physical and social; and finally



- Tremendous pressure on urban infrastructure.

Infact, the positive role of urbanization in India, has been often overshadowed by the deterioration in the environment and quality of life in the cities, often caused by the widening gap between demand and supply of services and infrastructure.

## **1.1 Physical Environment**

### **A) Air Quality**

India's urban areas represent complex problems regarding the physical environment. In particular, the quality of the ambient air in these areas have been deteriorating rapidly over the past few decades, due to vehicular, thermal and industrial and domestic emissions. Motor vehicles, which are the main source of vehicular pollution, have been constantly increasing in number particularly since the 1990s (Table 4). Within 10 years from 1990 to 2000 there has been almost a three-fold increase in the number of motor vehicles in India. On an average a 10 percent increase has been found in each year, which is a serious matter regarding air pollution.

Specific case studies reveal that the number of vehicles in Delhi has increased from 1813 thousand in 1991 to 2630 thousand in 1996, a one and half times increase in 6 years followed by Chennai. This is because a lack of sub-urban trains in Delhi, that also has a huge number of commuting population. On the other hand, increase in the number of vehicles was quite less in Mumbai and Kolkata compared to Delhi and Chennai.

**Table 4. Growth in the Number of Motor Vehicles in India, 1999-2000**

| <b>Years</b> | <b>Number of Vehicles (in thousands)</b> | <b>Percent Increase</b> |
|--------------|------------------------------------------|-------------------------|
| 1990         | 19152                                    | --                      |
| 1991         | 21374                                    | 11.6                    |
| 1992         | 23507                                    | 10.0                    |
| 1993         | 25505                                    | 8.5                     |
| 1994         | 27660                                    | 8.4                     |
| 1995         | 30287                                    | 9.5                     |
| 1996         | 33850                                    | 11.8                    |
| 1997         | 37231                                    | 10.0                    |
| 1998         | 43159                                    | 15.9                    |
| 1999         | 48240                                    | 11.8                    |
| 2000         | 53100                                    | 10.1                    |

Source: Centre for Pollution Control Board, Ministry of Environment and forests, Government of India, New Delhi, 2000

Moreover, over congestion tends to **degrade roads, decrease fuel efficiency**, and exacerbates certain types of **air pollution**. In the industrial areas, fossil fuels, particularly coal, is one of the major sources of energy and contribute to air pollution in the form of **Suspended Particulates**. While large industries are willing to control and monitoring air pollution but small industries lack information, technical expertise to check pollution. Trend analysis predicts a considerable rise in pollutant emissions from **thermal power** as well as **industrial sources** over the next two decades. The urban households generally use LPG while the households of lower income use coal, kerosene and bio-mass fuels, which are highly polluting and due to poor ventilation it deteriorates **indoor air quality** and health.

**Table 5. Growth of Vehicles in Metropolitan Cities: 1991-1996 as on 31<sup>st</sup> March (in 000s)**

| <b>Metropolitan Cities</b> | <b>1991</b> | <b>1992</b> | <b>1993</b> | <b>1994</b> | <b>1995</b> | <b>1996</b> |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Mumbai                     | 629         | 647         | 546         | 608         | 667         | 724         |
| Kolkata                    | 475         | 497         | 517         | 545         | 561         | 588         |
| Delhi                      | 1813        | 1963        | 2097        | 2239        | 2432        | 2630        |
| Chennai                    | 544         | 604         | 641         | 689         | 768         | 812         |

**Source:** transport Research Wing, Motor Transport Statistics of India, 1997, M/o Surface Transport, GOI, New Delhi.

**Vehicular Pollution** – Among all the vehicular emission loads, the amount of carbon monoxide (CO) was found highest, followed by Hydro Carbon and Nitrogen Oxide in all the three metropolitan cities of Delhi, Kolkata and Chennai. The total amount of all type of vehicular emission load was found highest in the atmosphere of Delhi (1046 tonnes per day), followed by Mumbai (660 tonnes per day), and Kolkata (294 tonnes per day). Carbon Monoxide contributed to more than 65 percent in all the three metro cities, which is 651 tonnes per day in Delhi, followed by Mumbai (497 tonnes per day) and Kolkata (188 tonnes per day). The amount of Suspended Particulate Matter (SPM) in the air is highest in Delhi (10.3 tonnes per day), followed by Mumbai (5.6 tonnes per day), and Kolkata (3.3 tonnes per day). Since the number of registered vehicles in Delhi is the highest, the vehicular emission load also substantiates it, as all the elements were found highest in Delhi. The components of the vehicular emission load affect the health of the people and deteriorate the quality of life of the residents of metro cities.

**State of Ambient Air Quality and Air Pollution in Urban Areas** – The most common air pollutants in the urban areas of India are Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxides (NO<sub>2</sub>) and Suspended Particulate Matter (SPM), (Table 7). In general it has been observed that though the presence of certain pollutants like SPM has been declining in most of the cities of India, but there exists wide differences across different cities.

**Table 6. Estimated Vehicular Emission Load in 1994 (tonnes per day)**

| <b>Emission Load</b>               | <b>Delhi</b>   | <b>Mumbai</b> | <b>Kolkata</b> |
|------------------------------------|----------------|---------------|----------------|
| Particulates                       | 10.30          | 5.59          | 3.25           |
| Sulphur Dioxide (SO <sub>2</sub> ) | 8.96           | 4.03          | 3.65           |
| Nitrogen Oxide (NO <sub>x</sub> )  | 126.46         | 70.82         | 54.69          |
| Hydro Carbons (HC)                 | 249.57         | 108.20        | 43.88          |
| Carbon Monoxide (CO)               | 651.01         | 496.60        | 188.24         |
| <b>TOTAL</b>                       | <b>1046.30</b> | <b>659.57</b> | <b>293.71</b>  |

Source: Centre for Science and Environment 1996

In fact, Delhi shows an increasing trend, from 390 mg/cu.m (milligram / cubic metre), to 410 mg/cu.m from 1991 to 1995. Again the concentration of SO<sub>2</sub> has decreased in Mumbai but it had registered a decline in Kolkata.

**Table 7: Ambient Air Quality if Four Metropolises of India: 1991-1995**

| <b>Metropolitan Cities</b> | <b>Pollutants (mg/cu.m)</b> | <b>1991</b> | <b>1992</b> | <b>1993</b> | <b>1994</b> | <b>1995</b> |
|----------------------------|-----------------------------|-------------|-------------|-------------|-------------|-------------|
| Mumbai                     | SO <sub>2</sub>             | 28          | 18          | 22          | 33          | 31          |
|                            | NO <sub>2</sub>             | 29          | 33          | 35          | 34          | 26          |
|                            | SPM                         | 244         | 238         | 232         | 231         | 209         |
| Kolkata                    | SO <sub>2</sub>             | 63          | 36          | 40          | 48          | 35          |
|                            | NO <sub>2</sub>             | 40          | 27          | 40          | 34          | 29          |
|                            | SPM                         | 391         | 307         | 460         | 375         | 354         |
| Delhi                      | SO <sub>2</sub>             | 20          | 18          | 19          | 25          | 23          |
|                            | NO <sub>2</sub>             | 34          | 30          | 30          | 43          | 47          |
|                            | SPM                         | 390         | 364         | 424         | 446         | 410         |
| Chennai                    | SO <sub>2</sub>             | 14          | 7           | 14          | 16          | 21          |
|                            | NO <sub>2</sub>             | 1           | 3           | 0           | 0           | 0           |
|                            | SPM                         | 130         | 74          | 100         | 128         | 127         |

Source: Anon 1997, Ambient Air Quality Status and Statistics, 1995, NAAQMS/8 1996, Central Pollution Control Board, Delhi.

## **B) Water Quality:**

**Pollution, Collection and Treatment** – Like air pollution, water pollution is also one of the major problems in the urban areas of India, resulting out of increased human activities and interference with the natural ecosystems. The major water resources of India including both surface and underground resources are not only **diminishing**, but are increasingly getting **polluted** due to human interventions. Wasteful consumption and neglect of conservation of water resources have resulted in the present situation. With rapid urbanisation and industrialisation, huge quantities of waste water enter river. At the same time, the available per capita water resources have declined due to falling groundwater tables associated with indiscriminate use of water. About 84.9 percent of the

urban population of India had access to clean drinking water in 1993, as compared to 69 percent in 1985.

In urban areas, water, to a large extent is treated by municipal authorities before supplying to residential areas. However, most Indian rivers today fall short of **Central Pollution Control Board** standards due to excessive pollution by untreated sewage, and domestic and industrial wastes. Increase in urban population and **changing lifestyles** have also **increased the domestic need** for water. Intense competition among users – industry and domestic sectors – is driving the ground water table lower.

**Table 8. Changing Pattern of Water Quality (1990-2000)**

| Cities         | Water Quality   | pH          | DO                            | BOD         | COD         | Total Coliform |
|----------------|-----------------|-------------|-------------------------------|-------------|-------------|----------------|
| 1. Kolkata     | Moderately good | Moderate    | Moderate                      | Moderate    | High        | High           |
| 2. Delhi       | Deteriorated    | High        | Decreased form 9.1 to 5.5mg/l | High        | High        | High           |
| 3. Hyderabad   | Worsened        | Worsened    | N.A.                          | Worsened    | Worsened    | N.A.           |
| 4. Ahmedabad   | Deteriorated    | N.A.        | N.A.                          | Decreased   | Decreased   | N.A.           |
| 5. Pune        | Moderately good | N.A.        | Decreased                     | High        | High        | N.A.           |
| 6. Kanpur      | Improved        | N.A.        | N.A.                          | N.A.        | N.A.        | N.A.           |
| 7 Lucknow      | Good            | N.A.        | N.A.                          | N.A.        | N.A.        | N.A.           |
| 8. Patna       | No Variation    | Permissible | Permissible                   | Permissible | Permissible | High           |
| 9. Ludhiana    | Good            | Improved    | Poor                          | Improvrd    | Improvrd    | Improved       |
| 10. Agra       | Deteriorated    | High        | High                          | High        | High        | permissible    |
| 11. Nasik      | Good            | Permissible | Permissible                   | High        | Permissible | Permissible    |
| 12. Jamshedpur | Moderately good | N.A.        | N.A.                          | N.A.        | N.A.        | N.A.           |
| 13. Asansol    | Deteriorated    | Permissible | Permissible                   | Permissible | High        | High           |
| 14. Allahabad  | Good            | N.A.        | N.A.                          | N.A.        | N.A.        | N.A.           |
| 15. Amritsar   | Good            | Permissible | Permissible                   | Permissible | Permissible | Permissible    |
| 16. Vijaywada  | Very Good       | N.A.        | N.A.                          | N.A.        | N.A.        | N.A.           |

**Source: Central Pollution Control Board, 1999 -2000**

The quality of ground water is getting severely affected because of the widespread pollution of surface water. Besides, discharge of untreated waste water through bores and leaching from unscientific disposal of solid wastes also contaminates ground water, thereby **reducing the freshwater resources**.

Four physio-chemical and one biological parameter taken into consideration, i.e. pH (acidity-alkalinity), DO (Dissolved Oxygen), BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand), and TC (Total Coliform) to analyse the surface water quality of 16 major Indian cities, showing the change that has taken place is given in Table 8. Other water pollutants include Water Temperature and Ammonia. The deteriorating ground water quality due to pollution from pesticide leaching and toxic metal leaching from the industrial effluents **have serious health effects** on population.

The volume of domestic waste water generation is highest in the metropolitan city of Mumbai, which is 2228.1 ml/d (million litres/day), followed by Kolkata (1383ml/d), and Delhi (1270ml/d) and the lowest is in Chennai only 276 ml/d. The generation of industrial waste water is also highest in Mumbai. Again, looking at the percentage of waste water collection from the four leading metropolitan cities, Chennai and Mumbai performs better than Delhi and Kolkata. Regarding the treatment of the collected waste water in all the metro cities, the water is disposed only after primary and secondary treatment. Again, the collected wastewater in Mumbai is mainly disposed in the Arabian Sea, and in Kolkata some amount is disposed in the Hugli river and the rest is used in fish farms. However, in Delhi and Chennai, the wastewater is mainly used for agricultural works and the remaining water is disposed in the Yamuna River in Delhi and in the Bay of Bengal in Chennai.

**Table 9. Waste Water Management in Metropolitan Cities of India 1997.**

| Metropolitan Cities | Volume of Waste Water Generated (mld) |            |        | Waste Water Collected |         | Capacity (mld) | Treatment |           | Mode of Disposal                    |
|---------------------|---------------------------------------|------------|--------|-----------------------|---------|----------------|-----------|-----------|-------------------------------------|
|                     | Domestic                              | Industrial | Total  | Volume (mld)          | Percent |                | Primary   | Secondary |                                     |
| Mumbai              | 2228.1                                | 227.9      | 2456.0 | 2210.0                | 90.0    | 109.0          | Yes       | Yes       | Sea                                 |
| Kolkata             | 1383.8                                | 48.4       | 1432.0 | 1074.9                | 75.1    | --             | --        | --        | Hugli River<br>Fish Farms           |
| Delhi               | 1270.0                                | --         | 1270.0 | 1016.0                | 80.0    | 981.0          | Yes       | Yes       | Agri-<br>culture<br>Yamuna<br>River |
| Chennai             | 276.0                                 | --         | 276.0  | 257.0                 | 93.1    | 257.0          | Yes       | Yes       | Agri-<br>culture<br>Sea             |

Source Control of Urban Pollution Series: Cups/42/1997-98, CPCB, 1997.

### C) Solid Waste Generation

The problem of municipal solid waste management has acquired alarming dimensions in our country especially over the last decade. Previously, waste management was hardly considered as an issue of concern as the waste could be easily disposed off in an environmentally safe manner. However, with time, due to changing lifestyles of people coupled with rapid urbanisation, and industrialisation the waste has not only increased but have become difficult to be managed.

Urban growth, a concomitant of inadequate infrastructural support, is turning India's major cities into waste dumps. The daily per capita generation of MSW (Municipal Solid Waste) in India ranges from about 100g in small towns to 500g in large cities. An estimated 48 million tonnes of Municipal Solid Waste was produced in 1997, e.g. the population of Mumbai increased from around 12.3 m in 1991 to 16.3 m in 2001, a growth of about 32.5 percent while the Municipal waste generation however grew from 3200 tonnes per day to 5355 tonnes per day in the same period, a growth of about 67 percent. This clearly indicates that the growth in Municipal waste generation in the urban centers has outpaced the growth in population in recent years. The reasons for this trend could be the changing life styles, food habits and changes in the standard of living. The per capita waste generation rate has increased from 375g per day to 490 per day during 1971-1997. This increase along with the population increase has tremendously swollen up the figures total waste generation quantum adding to the problems of local governments responsible for managing it. Analysing the data of MSW generated in 35 metro cities between 1994-1995 and from 1999-2000, there has been a 25 percent increase in this time period and Delhi topping the chart with 50 percent increase.

**Table 10: Composition of Solid Wastes in Major Cities: 1997 (in Percent)**

| Cities    | Non-Biodegradable |         |       |       |             | Degradable |
|-----------|-------------------|---------|-------|-------|-------------|------------|
|           | Paper             | Plastic | Metal | Glass | Ash & earth |            |
| Mumbai    | 10.00             | 2.00    | 3.60  | 0.20  | 44.20       | 40.00      |
| Kolkata   | 3.18              | 0.65    | 0.66  | 0.38  | 34.00       | 47.00      |
| Delhi     | 6.29              | 0.85    | 1.21  | 0.57  | 36.00       | 35.00      |
| Bangalore | 4.00              | 2.00    | 1.50  | 1.00  | 13.50       | 78.00      |
| Nagpur    | 1.88              | 1.35    | 1.33  | 1.34  | 41.42       | 34.81      |

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The annual solid waste generated in Indian cities has increased from 6 million tonnes in 1947 to 48 million tonnes in 1997 and is expected to increase to 300 million tonnes per annum by 2047 (CPCB, 2000).

Urban municipal waste is a mix of paper, plastic, metal, glass, and organic matter. Specially worrying is the increase in non-biodegradable plastic waste: discarded plastic bags choke drains, prevent smoother grass growth and exacerbate the damage-potential by preventing the bio-degradation of waste packed in them. The organic matter has remained almost static at 41 percent in the past three decades; but the recyclables have increased from 9.56 to 17.18 percent. Amongst various recyclables, plastics have had a quantum jump from 0.69 to 3.9 percent; more than a five-fold increase within last 20 years. Disposal is the last stage of the waste management cycle. Pace of industrialisation has resulted in increasing amounts of hazardous wastes every year. In total, at present, around 7.2 million tonnes of hazardous waste is generated in the country of which 1.4 million tonnes is recyclable, 0.1 million tonnes is incinerable and 5.2 m tonnes is destined for disposal of land. (Ministry of Environment and Forests, 2001).

The situation here is also grim in collection and transportation of solid wastes. At present most of the MSW in the country is disposed of **unscientifically**. This has adverse impacts not only on the eco-system but also on the human environment. About 90 percent municipal waste is collected by the civic authorities is dumped in low lying areas outside the city limits which no provision of leaching. Treatment and landfill gas collection and use are not practiced. Heavy metals find their way to the underground water, rendering it unfit for drinking. The landfill gases too escape into the atmosphere adding to the green house emissions and resulting in the loss of utilising the same alternatively, as thermal fuel or for electricity production. The changes in the average waste collection efficiency of the total generation in Indian cities is around 72 percent and 70 percent of Indian cities do not have adequate waste transportation facilities.

In Indian cities, MSW generally remains unmanaged due to various factors—viz. inadequate finances, low political priority, inadequately trained personnel, and the lack of proper disposal sites. As a result, residents are prone to diseases like hepatitis, malaria, dengue fever, elephantiasis, cholera, etc. For the waste that is managed, landfilling is the most commonly utilised method of disposal. However, since this primarily translates to open piles of decaying trash, rather than controlled underground burial, such unscientific



dumping of wastes, poses, a great danger to water resources in the neighbouring areas. The problem is further complicated by the frequent presence of other kinds of wastes, specifically, infectious hospital wastes, slaughter house refuse, and various toxic organic and inorganic materials. All these contaminants find their way into local water bodies and subsequently lead to water pollution.

#### **D) Noise Levels**

Unlike air, water, land /soil pollution, noise as a source of pollution has got attention only recently in India. The main factors contributing to noise pollution are vehicular traffic, industrial activities, various electrical appliances, and sources of entertainment such as musical systems, TVs, public addressal systems etc. It is mostly the people living in metropolitan cities, or other big towns or those working in factories who are victims of noise pollution.

**Table 11: Noise Level in Few Cities of India: 1998**

| <b>Cities</b> | <b>Day/Night</b> | <b>Industrial Area</b> | <b>Commercial Area</b> | <b>Residential Area</b> | <b>Silence Zone</b> |
|---------------|------------------|------------------------|------------------------|-------------------------|---------------------|
| Kolkata       | Day              | 78                     | 82                     | 79                      | 79                  |
|               | Night            | 67                     | 75                     | 65                      | 65                  |
| Mumbai        | Day              | 76                     | 75                     | 70                      | 66                  |
|               | Night            | 65                     | 66                     | 62                      | 52                  |
| Chennai       | Day              | 71                     | 78                     | 66                      | 63                  |
|               | Night            | 66                     | 71                     | 48                      | 49                  |
| Bangalore     | Day              | 78                     | 76                     | 67                      | 67                  |
|               | Night            | 53                     | 57                     | 50                      | n.a                 |

**Source: Ministry of Environment and Forest (2001)**

The menace of noise pollution is prevalent in all the major cities of India. Except for noise pollution, during night time, in industrial zone as most of the industries are closed down during this time, the level of noise far exceeds the standard level in all the other zones of the city and the nuisance is more during the day time and is often at a critical level in residential and silence zones. A study has revealed that noise level in residential, commercial and industrial areas and the silence zones in major cities far exceed the standards prescribed by CPCB. The average noise level is in excess of the recommended level of 55dB. Increase in vehicular traffic, industrialisation and overcrowding of cities is generally attributed for the increase in noise levels.

**The Environment Protection Act (1986)** made a passing reference to noise pollution. Although a notification was further issued in 1989, on Ambient Quality Standards vice versa Noise, but it hardly made any impact on controlling noise pollution.

Fourteen years later, in February 2000, **Ministry of Environment and Forests** formulated the **Noise Pollution (Regulation and Control) Rules**. The salient features of these rules are that the State Governments being the implementation authority, should initiate the process of controlling noise pollution by classifying the areas into residential, commercial, industrial and silence zones. The rules further provide that the governments should ensure that the noise levels do not exceed the permissible limits.

## **1.2 Social Environment**

### **A) Urbanisation and Slums –**

The Government of India **Slum Area (Improvement and Clearance) Act of 1954** defines a slum as “any predominantly residential area, in which light or sanitary facilities or any combination of these factors are detrimental to the safety, health or morals”. According to NSS (National Sample Survey), “a slum is a compact settlement with a collection of poorly built tenements, mostly of temporary nature, crowded together, in unhygienic conditions, usually with inadequate sanitary and drinking water facilities. Such an area is considered as a **Non-Notified Slum** if at least 20 households live in that area. **Notified Slums** are those areas notified as Slums by **Urban Local Bodies (ULBs)** or **development authorities**. The vast majority of the city ward migrants belongs to the working class and finds it difficult to secure accommodation within their means. Therefore they squat on every open space available, nearby their work places and construct huts with cheap temporary building materials. In this way, slums grow in number and population. Total and slum population in India according to size/class of towns during 1991 showed that 41 percent of the total slum population was residing in million plus cities where 27 percent of the total population of India resided. However, cities with population between 0.5 – 1 million have only 9 percent of total slum population, where 20 percent of the total population was residing. Further, cities with population between 0.3 to 0.5 million had only 6 percent of total slum population ; where 19 percent of total population was residing. This shows that cities with population between 0.5 to 1 million and city with population between 0.3 to 0.5 million have very less percentage of slum population whereas million plus cities have more percentage of slum population. It reveals that the opportunity in the medium cities is less than that offered by the million cities.

**Table 12. Total Slum Population in India According to Size Class of Towns -1991**

| Size Class /Cities | Number of Cities/Towns | Total Population (in 00000) | Percent to Total Population | Slum Population (in 00000) | Percentage to total Slum Population |
|--------------------|------------------------|-----------------------------|-----------------------------|----------------------------|-------------------------------------|
| More than 1000000  | 23                     | 710                         | 26.6                        | 189                        | 41.3                                |
| 500000-1000000     | 31                     | 215                         | 19.8                        | 43                         | 9.3                                 |
| 300000-499999      | 39                     | 151                         | 18.9                        | 29                         | 6.3                                 |
| 100000-299999      | 207                    | 325                         | 16.8                        | 54                         | 11.9                                |
| 50000-99999        | 345                    | 236                         | 20.0                        | 47                         | 10.3                                |
| Less than 50000    | 3052                   | 521                         | 18.3                        | 95                         | 20.9                                |
| TOTAL              | 3697                   | 2158                        | 21.2                        | 457                        | 100.0                               |

Source: A Compendium of Indian Slums, 1996, Town and Country Planning Organisation

Therefore, the unskilled population is more attracted towards the million cities and thus joins the slums for their residence. On the other hand, the towns with population less than 50,000 showed little more percentage of total slum population (21 percent) than their share of total population (18 percent). This shows that the poor housing quality in the small towns and also may be because the semi-pucca and kutchha houses may have been identified as slums.

**Table 13. Percentage of Slum Population in the Four Metropolitan Cities of India: (1981-2001)**

| Metropolitan Cities        | 1981 | 1991 | 2001 |
|----------------------------|------|------|------|
| Greater Mumbai (UA)        | 30.8 | 43.2 | 48.9 |
| Kolkata (UA)               | 30.3 | 36.3 | 32.6 |
| Delhi Municipal Corp. (UA) | 18.0 | 22.5 | 18.9 |
| Chennai (U.A.)             | 13.8 | 15.3 | 17.7 |

Source: Census of India 1981, 1991, 2001.

Slum population is a serious problem of the mega cities of India. A large population of Mumbai, Kolkata and Delhi live in slums, despite several Government housing policies. A continuous increase has been found in the percentage of slum population over the last three decades in the four metropolitan cities of India in which Mumbai was the highest. In 1981, 34 percent of the population of Mumbai were residing in slums, and in 2001, nearly half of Mumbai's population (49 percent) were living in slums. However, Kolkata, Delhi, and Chennai had not shown as severe conditions as Mumbai, but Chennai had shown an increase in the slum population over 1991.

Urban slums are marked by deplorable living environment and of often marked by a lack of civic amenities and facilities leading to environmental degradation and higher incidences of morbidity.

**Table 14: Living Environment of Urban Households Living in Slums: 2002**

| State | % of Households Living in Slums |      | Mode of Water Access (%) |             |         |       |             |         | % With Under - ground Sewage |     | % Without any Drainage |     | % Without Latrines |     |
|-------|---------------------------------|------|--------------------------|-------------|---------|-------|-------------|---------|------------------------------|-----|------------------------|-----|--------------------|-----|
|       |                                 |      | NS                       |             |         | NNS   |             |         |                              |     |                        |     |                    |     |
|       | NS                              | NNS  | % Tap                    | % Tube well | % other | % Tap | % Tube well | % Other | NS                           | NNS | NS                     | NNS | NS                 | NNS |
| J&K   | 59.6                            | 40.4 | 100                      | 0           | 0       | 98    | 2           | 0       | 0                            | 0   | 100                    | 100 | 61                 | 76  |
| Punj  | 75.6                            | 24.4 | 43                       | 57          | 0       | 0     | 100         | 0       | 34                           | 0   | 0                      | 95  | 48                 | 95  |
| Delh  | 20.5                            | 79.5 | 100                      | 0           | 0       | 71    | 29          | 0       | 0                            | 3   | 31                     | 24  | 31                 | 52  |
| Raj   | 2.2                             | 97.8 | 100                      | 0           | 0       | 27    | 0           | 73      | 0                            | 0   | 67                     | 98  | 33                 | 98  |
| UP    | 50.6                            | 49.4 | 34                       | 67          | 0       | 59    | 41          | 0       | 35                           | 11  | 1                      | 71  | 1                  | 51  |
| Bih   | 37.8                            | 62.2 | 0                        | 100         | 0       | 0     | 100         | 0       | 0                            | 0   | 34                     | 75  | 34                 | 100 |
| WB    | 52.1                            | 47.9 | 89                       | 11          | 0       | 72    | 18          | 10      | 63                           | 23  | 0                      | 39  | 0                  | 30  |
| Ori   | 14.2                            | 85.8 | 100                      | 0           | 0       | 57    | 44          | 0       | 0                            | 0   | 0                      | 90  | 100                | 100 |
| Chat  | 46.9                            | 53.1 | 31                       | 69          | 0       | 71    | 25          | 4       | 0                            | 0   | 0                      | 25  | 69                 | 100 |
| MP    | 65.7                            | 34.3 | 68                       | 20          | 12      | 75    | 25          | 0       | 24                           | 0   | 31                     | 38  | 12                 | 75  |
| Guj   | 38.7                            | 61.3 | 33                       | 2           | 65      | 74    | 26          | 0       | 83                           | 7   | 2                      | 73  | 6                  | 69  |
| Mah   | 74.7                            | 25.3 | 95                       | 3           | 2       | 91    | 3           | 6       | 34                           | 27  | 10                     | 23  | 18                 | 25  |
| AP    | 85.1                            | 14.9 | 87                       | 2           | 11      | 46    | 55          | 0       | 12                           | 0   | 21                     | 66  | 10                 | 68  |
| Kar   | 65.6                            | 34.4 | 89                       | 11          | 0       | 77    | 16          | 7       | 23                           | 24  | 36                     | 24  | 66                 | 53  |
| TN    | 53.5                            | 46.5 | 85                       | 0           | 15      | 93    | 3           | 4       | 57                           | 11  | 16                     | 44  | 15                 | 68  |
| Pond  | 29.0                            | 71.0 | 100                      | 0           | 0       | 97    | 3           | 0       | 0                            | 7   | 0                      | 10  | 29                 | 93  |
| TOT   | 65.1                            | 34.9 | 84                       | 10          | 6       | 71    | 22          | 7       | 30                           | 15  | 15                     | 44  | 17                 | 51  |

**Note:** NS- Notified Slum, NNS – Non Notified Slum

**Source:** NSSO (2003a)

## B) Crime in cities

### Indian Penal Code (IPC) Crimes in Cities

Due to the increasing disparities in the urban areas of India, particularly the million plus cities, urban crime has been on the rampant in most of the areas. The common types are theft of property, crime against women, crime against children, crime against the aged and cyber crimes.

A total of 297679 cognizable crimes under the IPC (Indian Penal Code) were reported from the 35 million plus cities in 2002, (National Crime Records Bureau, Ministry of Home Affairs, 2002), as compared to 289775 crimes during 2001, thereby reporting an increase of 2.7 percent compared to the national scenario on a marginal increase of 0.6 percent. The Indian metropolises witnessed an **increase of Murder** (5.9 percent), **attempt to commit murder** (6.2 percent), **dacoity** (37.1), **riots** (1.3) and **dowry deaths** (10.1). In addition, the metropolitan centers, had also contributed to 45.9 percent of the total **Auto thefts** cases in the country, 31.5 percent **cheating cases** and 28.6 percent of **counterfeiting** cases of the nation's total crime.

The cities of Delhi and Mumbai contributed 14.8 percent and 8.8 percent of the total crimes reported from the 35 million plus cities. Ludhiana of Punjab, reported the highest increase of 46.8 percent IPC crimes in 2002, followed by Vadodara of Gujarat (41.0), Vijayawada of Andhra Pradesh (34.9) and Faridabad of Haryana (31.5 percent).

**Table 15: IPC Crime Rate – Metropolitan Cities Vs Parent State**

| Sl. No.      | City          | IPC Crime Rate |              |
|--------------|---------------|----------------|--------------|
|              |               | City           | Parent State |
| 1            | Agra          | 425.2          | 85.5         |
| 2            | Ahmedabad     | 320.4          | 206.0        |
| 3            | Allahabad     | 175.0          | 85.5         |
| 4            | Amritsar      | 106.5          | 116.2        |
| 5            | Asansol       | 33.3           | 72.2         |
| 6            | Bangalore     | 512.0          | 211.8        |
| 7            | Bhopal        | 767.4          | 309.0        |
| 8            | Chennai       | 132.7          | 265.2        |
| 9            | Coimbatore    | 223.1          | 265.2        |
| 10           | Delhi         | 345.2          | 341.6        |
| 11           | Dhanbad       | 304.7          | 114.1        |
| 12           | Faridabad     | 408.1          | 185.5        |
| 13           | Hyderabad     | 260.4          | 186.7        |
| 14           | Indore        | 712.9          | 309.0        |
| 15           | Jabbalpur     | 603.0          | 309.0        |
| 16           | Jaipur        | 505.9          | 260.2        |
| 17           | Jamshedpur    | 218.2          | 114.1        |
| 18           | Kanpur        | 219.6          | 75.7         |
| 19           | Kochi         | 481.5          | 322.9        |
| 20           | Kolkata       | 80.7           | 72.2         |
| 21           | Lucknow       | 306.7          | 85.5         |
| 22           | Ludhiana      | 376.0          | 116.2        |
| 23           | Madurai       | 308.7          | 265.2        |
| 24           | Meerut        | 200.0          | 85.5         |
| 25           | Mumbai        | 160.5          | 167.4        |
| 26           | Nagpur        | 410.8          | 167.4        |
| 27           | Nasik         | 218.8          | 167.4        |
| 28           | Patna         | 357.4          | 110.4        |
| 29           | Pune          | 226.4          | 167.4        |
| 30           | Rajkot        | 463.5          | 206.0        |
| 31           | Surat         | 148.4          | 206.0        |
| 32           | Vadodara      | 476.9          | 206.0        |
| 33           | Varanasi      | 188.2          | 85.5         |
| 34           | Vijaywada     | 898.4          | 186.7        |
| 35           | Visakhapatnam | 213.5          | 186.7        |
| <b>TOTAL</b> |               | <b>275.9</b>   | <b>169.5</b> |

Source: Crime In India, 2002, national Crime records Bureau, Ministry of Home Affairs, GOI.

It has been observed that the IPC crime rate in cities was generally higher than the corresponding crime rate of the domain state. Only in case of Asansol, Amritsar, Chennai, Coimbatore, Mumbai and Surat, the crime rate was lower than the parent state.

## **Crimes under Special and Local Laws (SLL)**

The 35 metropolitan cities reported 1625689 cases of SLL crimes in 2002 compared to 1763759 cases in the previous year. Contrary to the National level increase of 4.9 percent, cities reported a decrease of reported cases of 7.8 percent over 2001.

Despite this, the 35 million plus cities contributed significantly towards the nation's share for cases under **Copyright Act** (36.9 percent), **Indecent Representation of Women Prohibition Act** (22.4 percent), **Immoral Traffic (P) Act** (17.9 percent) and **Arms Act** (19.9 percent). **Ludhiana** reported the highest percentage of 78.2 percent, followed by Varanasi 72.3 percent. In addition, **Kolkata and Vijaywada** also reported much higher incidences of cases under SLL.

## **Cyber Crimes**

In recent years Cyber Crimes have also increased in the Indian Cities. **The Information technology (IT) Act of 2000**, specifies, the criminal acts under the broad head of Cyber Crimes. Of the total 70 cases registered under IT Act 2000, around 47 percent cases pertain to obscene publication and transmission in electronic form. 38 persons were taken in custody for such offences during 2002. Other such cases include hacking, signature fraud, breach of confidentiality etc. The urban centers of Andhra Pradesh, Maharashtra, Karnataka, and Delhi reported the maximum number of these cases.

## **2. Environmental Infrastructure**

The **escalating demand** for urban basic services and infrastructure in urban centers is resulting in a serious deterioration of service quality across housing, transport, healthcare, power and water, sanitation and education. Benign neglect of urban sprawls by civic authorities has led cities to be vulnerable to natural disasters and disease. The recent Mumbai floods of July 2005, has pointed out unmistakably that infrastructure of cities in India is crying for help.

In recent years the infrastructure required to meet the requirements of the urban dwellers call for huge investments.

### **2.1 Housing and Housing Amenities and Infrastructure**

The urban housing characteristics for entire India and the four leading Metros of Mumbai, Kolkata Delhi and Chennai reveal the following facts. In Mumbai, 34 percent of the households lived in semi-pucca and 3 percent in Kutchha houses followed by 33 percent and 9 percent respectively in Chennai. However, in Delhi, 11 percent households resided in semi-pucca

and less than 1 percent in kutchha houses. It is a good sign for Kolkata that there were only 5 percent semi-pucca houses and almost negligible kutchha houses. This shows that in Mumbai and Chennai housing situation is poorer than Kolkata and Delhi.

On the other hand, the houses in these metros are very much **over crowded**. More than 3 persons residing in a single room, is the condition of 56 percent of the population of Mumbai followed by 43 percent population of Kolkata, 30 percent population of Chennai and 1/4<sup>th</sup> of the population of Delhi. Further, 5 and more persons residing in a room, such miserable conditions was faced by 28 percent population of Mumbai, followed by 17 percent of the population of Kolkata and about 10 percent population of Delhi and Chennai both.

Looking at the sanitation condition of the metro-cities, it is apparent that almost universal flush toilet facility is available in Mumbai, followed by 90 percent in Kolkata and 89 percent in Delhi. However, the matter of fact is that more than half of this facility in Mumbai is available in public place and not within housing premises. Kolkata and Delhi might have the similar situation. Again, it is unfortunate to note that about 9 percent population of Kolkata Delhi uses pit toilet. Further, what is worse is that 9 percent of Chennai's population does not have toilet facility at all, followed by 6 percent in Delhi. This shows the inadequate planning of Municipal Corporations because of unprecedented population pressure.

As regard to the sources of safe drinking water, the situation is the best in Mumbai, where almost the entire population has access to piped drinking water. However, a substantial population is dependent on hand pump in Kolkata (35 percent), followed by Chennai (31 percent) and Delhi (13 percent). On the other hand, in Chennai 6 percent of the population is dependent on the sources other than hand pump and tapped/piped water.

Considering the methods of purification of drinking water, it is very strange that half of the urban population in India does not purify drinking water at all. In Kolkata 3/4<sup>th</sup> population do not purify drinking water followed by 62 percent of the population of Delhi. However, the situation is slightly better in Mumbai and Chennai, where 27 percent and 43 percent population respectively do not purify drinking water. But at the same time, majority of Mumbai's population purify drinking water by straining only. The situation reveals the danger of water-borne diseases. This may cause **serious health problems** especially to the slum dwellers and low-income groups, and that too mostly among the children and infants.

**Table 16: Housing Characteristics of Four Leading Metropolitan Cities and Urban India:**  
**1988-99 (in percentage)**

| Household Characteristics                  | Mumbai | Kolkata | Delhi | Chennai | All India Urban |
|--------------------------------------------|--------|---------|-------|---------|-----------------|
| <b>Type of House</b>                       |        |         |       |         |                 |
| Pucca                                      | 62.8   | 94.1    | 88.2  | 57.5    | 66.0            |
| Semi-Pucca                                 | 34.1   | 5.2     | 10.7  | 32.8    | 24.4            |
| Kutcha                                     | 2.8    | 0.2     | 0.9   | 9.2     | 9.4             |
| <b>Sanitation Facilities</b>               |        |         |       |         |                 |
| Flush Toilet                               | 97.4   | 89.5    | 85.5  | 89.1    | 63.9            |
| Owned Flush Toilet                         | 29.4   | --      | --    | --      | --              |
| Shared Flush Toilet                        | 15.2   | --      | --    | --      | --              |
| Public Flush Toilet                        | 52.8   | --      | --    | --      | --              |
| Pit Toilet                                 | 0.1    | 8.9     | 8.9   | 1.6     | 16.8            |
| No Facility                                | 2.5    | 1.6     | 5.6   | 9.3     | 19.3            |
| <b>Sources of Drinking Water</b>           |        |         |       |         |                 |
| Piped                                      | 99.6   | 64.0    | 86.7  | 63.3    | 74.5            |
| Hand Pump                                  | 0.2    | 34.5    | 12.0  | 30.6    | 18.1            |
| Others                                     | 0.2    | 1.5     | 1.3   | 6.1     | 7.4             |
| <b>Methods of Purifying Drinking Water</b> |        |         |       |         |                 |
| Straining                                  | 54.1   | 1.0     | 3.9   | 14.7    | 25.1            |
| Water Filter                               | 10.2   | 17.0    | 18.8  | 15.1    | 14.8            |
| Boiling                                    | 18.2   | 5.7     | 14.4  | 38.2    | 13.6            |
| Electronic Purification                    | 2.5    | 2.7     | 3.8   | 3.0     | 1.2             |
| Other Methods                              | 0.7    | 1.5     | 1.0   | 0.7     | 2.0             |
| No Purification                            | 27.1   | 74.2    | 62.4  | 42.8    | 50.4            |
| <b>Electricity</b>                         |        |         |       |         |                 |
| Yes                                        | 99.5   | 93.8    | 97.7  | 89.6    | 91.3            |
| No                                         | 0.5    | 6.2     | 2.3   | 10.4    | 8.7             |
| <b>Main Type of Fuel used for Cooking</b>  |        |         |       |         |                 |
| Kerosene                                   | 39.5   | 50.3    | 16.3  | 54.0    | 21.5            |
| LPG                                        | 58.9   | 39.9    | 17.0  | 37.3    | 46.9            |
| Bio-Mass and Others                        | 1.4    | 14.6    | 3.7   | 8.7     | 31.65           |
| <b>Persons Per Room</b>                    |        |         |       |         |                 |
| Less than 3                                | 43.9   | 57.4    | 75.2  | 69.9    | 68.6            |
| 3-4                                        | 27.6   | 25.3    | 15.1  | 19.8    | 19.5            |
| 5-6                                        | 20.1   | 11.9    | 6.7   | 8.8     | 8.3             |
| 7 and Above                                | 8.3    | 5.5     | 3.0   | 1.1     | 3.5             |

Electricity facility is almost universal to Mumbai's population whereas 10 percent population of Chennai and 6 percent population of Kolkata do not have electricity facility. Main type of fuel used for cooking in urban India is LPG followed by bio-mass fuel and kerosene. However, in Kolkata and Chennai more than 50 percent population uses kerosene. There is very less percentage (less than 9 percent) of user of Bio-mass fuel and others in all the four metro-cities, except Kolkata, where 15 percent population uses it. This enhances the problem of **indoor air pollution** in the metro-cities.

## 2.2 Energy



The study of energy use in the urban areas is of particular importance in view of the impact of urbanisation on the utilisation of commercial energy resources like coal and oil products. The process of urbanisation leads to the substitution of commercial energy for non-commercial energy in industry, commercial and domestic sectors (the share of consumption of commercial energy carriers by urban areas is about 80 percent whereas that of urban population is only 32 percent). Thus one can relate urban development with increased commercial energy use. Urbanites travel via **energy-intensive transportation modes**. Building infrastructure in urban areas to support the high population density requires significant quantity of energy. Also in an urban environment, land use pattern, spatial structures, industrial location etc. affect the levels of energy consumption.

The changes in life style of urban people in recent years have contributed significantly to differences in energy-utilisation levels. In the residential sector fuel wood and charcoal stoves have been replaced with kerosene stoves for the urban poor. The propensity to consume more and more electricity is marked by an increase in the usage of air conditioners, desert coolers, refrigerators micro waves, washing machines, electric geysers, electric kettles and a host of domestic electrical gadgets, including, television, music systems, home theaters etc. Scooters and cars are being frequently used even by the middle-income groups.

Due to the increased availability and affordability, the shares of modern carriers like Liquefied Petroleum Gas (LPG) and electricity are significantly high in the urban areas. Also urban houses utilise larger quantities of superior energy than rural households. Hence, it is important to assess this problem of relative deprivation, both quantitative and qualitative going beyond final to useful energy. Also, since urban areas consume significant quantities of petroleum products, 2/3rds of which are imported, the issue of energy security should be taken into account, while considering urban energy policies.

The increase in urbanisation levels will have a significant impact on energy markets as well as on the global environment. Since energy production and use is the single most important source of green house gas (GHG) emissions, the pattern of energy utilisation and its environmental impact will strongly influence the look towards the environment in the future. The environmental implications are significantly dependent on the type of energy carrier chosen and hence it is important to restrict the use of commercial sources through efficient utilisation.

**Table 17: Percentage of Urban Households using Particular Energy Carrier, 2000-1**

| <b>Energy Carrier</b> | <b>Low Income</b> | <b>Middle Income</b> | <b>High Income</b> | <b>Total</b>  |
|-----------------------|-------------------|----------------------|--------------------|---------------|
| Fuel wood             | 41.64             | 12.69                | 2.52               | 22.21         |
| LPG                   | 12.58             | 42.35                | 64.67              | 35.53         |
| Dung                  | 3.63              | 1.52                 | 0.56               | 2.16          |
| Kerosene              | 26.38             | 32.63                | 20.61              | 27.02         |
| Others                | 15.76             | 10.82                | 11.65              | 13.09         |
| <b>Total</b>          | <b>100.00</b>     | <b>100.00</b>        | <b>100.00</b>      | <b>100.00</b> |

Source CMIE

## 2.3 Transport

Urban transport problems in India are becoming acute mainly because of rapid motorisation. The increasing use of motor vehicles in cities has been rapidly changing the mode-split structure. It has also helped to alter landuse patterns from compact to more dispersed which in turn reinforces the use of personalised motor vehicles. At present motor vehicle ownership in India, including two-wheelers and three-wheelers, is just a little over 40 vehicles per one thousand population. This is low compared to high income countries. During the last decade, motor vehicle ownership in India has expanded at roughly 10 percent a year. But the growth in the metropolitan cities registered over 5 percent a year during the same period; significantly higher than the National Average. This growth pattern is expected to continue with the growth of per capita incomes, especially in urban areas. The growth will also be further reinforced by the Central Government policy of relying on a strong domestic auto market for the development of a viable auto industry.

Motorisation has brought a higher level of mobility to the urban economy, and to high income of the urban population. But its adverse impacts are also substantial-- the most significant of these impacts being **road congestion, air pollution and traffic accidents**. The urban transport scene in India, is typically a high mix of noisy traffic comprising of two-wheelers, three-wheelers, cars, buses and trucks, all fighting for road space. The streets in most Indian cities are old and narrow, occupying only 6 to 10 percent of land area. Growing traffic and limited road space have reduced peak hour speeds to 5 to 10 km and are in the central areas of many major cities.

Indian cities face growing risk of traffic accidents, and are considered to be more accident prone inspite of a relatively lower level of vehicular population. In 1997, the number of accidents in the top 15 metropolitan cities were 75,605 with 6242 fatalities. In the same year, the

Delhi Metropolitan Region where motor vehicle ownership reached 2.8 million recorded over 11000 traffic accidents, 24 percent of which were fatal.

**Table 18: Share of Two-Wheelers and Three-Wheelers - 1997**

| Cities    | Motor Vehicle Population | Share (in percentage) |             |
|-----------|--------------------------|-----------------------|-------------|
|           |                          | 2- Wheelers           | 3- Wheelers |
| Ahmedabad | 631,019                  | 77                    | 7           |
| Bangalore | 972,375                  | 73                    | 6           |
| Kolkata   | 587,576                  | 44                    | 2           |
| Delhi     | 2,847,695                | 66                    | 3           |
| Cochin    | 226,185                  | 60                    | 13          |
| Mumbai    | 796,913                  | 41                    | 12          |
| Hyderabad | 769,401                  | 87                    | 7           |
| Jaipur    | 448,625                  | 74                    | 2           |
| Kanpur    | 246,801                  | 79                    | 2           |
| Lucknow   | 330753                   | 80                    | 3           |
| Chennai   | 889,819                  | 73                    | 4           |
| Nagpur    | 238,576                  | 78                    | 6           |
| Patna     | 219,513                  | 69                    | 5           |
| Pune      | 476,372                  | 74                    | 8           |
| Surat     | 361,838                  | 85                    | 5           |

Source CMIE, Infrastructure,2001

### **SECTION III**

#### **1. Policy Perspectives on Urban Environment Management**

The following discussion shows that creating **Sustainable Urban Systems** have become a necessity under present day urban problems, related to urban environment and infrastructure. In other words we should not only think about solving the present day urban problems but should make the **cities livable** for the future generations to come. Let us consider certain critical policy links for **Urban Environment Management**.

### Box 1. Critical Policy Links for Urban Environment Management

| Urban Environment Management Issues                                               | Underlying Causes                                                                                                                                                                      | Relevant Policy Reforms                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Access to Environmental Infrastructure and Services</b>                        |                                                                                                                                                                                        |                                                                                                                                                                                                                                   |
| Serviced Land Shelter                                                             | Poor functioning of urban land and housing markets: Highly regulated prices, lack of affordable housing for the poor.                                                                  | Reform property rights; develop mortgage financing; introduce affordable standards and target subsidies to the poor; Reduce unneeded regulations, Governmental regulations and subsidies.                                         |
| Water supply, sanitation, drainage, solid waste collection and transport          | Supply side dominated by government monopoly: prices heavily regulated, heavy subsidies                                                                                                | Introduce pricing and demand management: reconsider subsidies: move towards decentralisation, privatisation and participation.                                                                                                    |
| <b>Pollution from Urban Wastes and Emissions</b>                                  |                                                                                                                                                                                        |                                                                                                                                                                                                                                   |
| Water Pollution                                                                   | Uncontrolled municipal and industrial discharges'; excessive water use and waste generation: failure to link water quantity and quality issues                                         | Introduce water pricing and effluent charges: subsidise sewage treatment: strengthen regulations and capacity for monitoring and enforcement: prepare comprehensive basin plans.                                                  |
| Energy Use and Air Pollution<br>- Ambient air pollution<br>- indoor air pollution | Increased motorisation and transportation congestion: energy supply side dominated by Government monopoly: heavy energy subsidies, household cottage industry use of low quality fuels | Introduce energy and fuel pricing, road charges, emission charges: reduce automobiles subsidies fuel subsidies: integrate transport and landuse planning: promote clean technologies, fuel substitution, and vehicle maintenance. |
| Solid and hazardous waste management                                              | Poor municipal management: Lack of disposal facilities: inadequate regulation and enforcement                                                                                          | Introduce regulation, licensing and charges: stimulate waste minimisation: strengthen operations: privatise disposal operations                                                                                                   |
| <b>Resource Losses</b>                                                            |                                                                                                                                                                                        |                                                                                                                                                                                                                                   |
| Ground water depletion                                                            | Unsustainable extraction link to unclear property rights and treatment as free resource                                                                                                | Clarify property rights: introduce extraction charges: rain water harvesting and artificial recharge of ground water in water deficit regions                                                                                     |
| Land and Ecosystem degradation                                                    | Low-income settlements "pushed" onto fragile lands by lack of access to affordable serviced lands; Lack of controls over damaging economic activities                                  | Coordinate land development; remove artificial shortages of land; develop sustainable uses of sensitive areas: monitor enforce landuse controls                                                                                   |
| Loss of agricultural and historic property                                        | Lack of property rights, regulations enforcement, maintenance; failure to reflect social values in land prices                                                                         | Introduce tax incentives for preservation; use redevelopment planning, zoning and building codes; develop property rights                                                                                                         |
| <b>Environmental Hazards</b>                                                      |                                                                                                                                                                                        |                                                                                                                                                                                                                                   |
| Natural Hazards                                                                   | Poorly functioning landmarks. Ineffective land policies; poor construction practices,                                                                                                  | Enable land markets; provide disincentives to construction practices or occupation of high risk areas, incentives for using disaster-resistant construction techniques;                                                           |

|                  |                                                                                              |                                                                                                                                                      |
|------------------|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
|                  |                                                                                              | disaster preparation plans.                                                                                                                          |
| Man-made Hazards | Inadequate regulation and enforcement: low income settlements alongside hazardous activities | Introduce and enforce environmental zoning: formulate urban disaster preparedness plans and strengthen response capacity. Disaster mitigation plans. |

Source: Economic Survey of Delhi - 2001-2002

## 2. Urban Governance and Urban Environment: Infrastructure and Services Management

In addition to the ULBs, at the Central level, the **Ministry of Urban Development** and **The Ministry of Urban Employment and Poverty Alleviation** form the apex authority of the GOI at the National level to formulate policies, sponsor and support programmes, coordinate the activities of various central ministries, state governments and of the nodal authorities and monitor the programmes concerning all issues of urban development and housing.

**The key interventions of the GOI** are:

- National Urban Transport Policy;
- Guidelines for sector reform and public-private partnership in the urban water and sanitation sector;
- Centrally Sponsored Schemes (CSS), such as integrated development of small and medium towns;
- Mega city schemes;
- Special development plan for National Capital Region;
- Accelerated urban water supply programme;
- Low cost sanitation etc.
- Administering fiscal concessions such as tax holidays for integrated urban infrastructure development projects;
- Urban environmental infrastructure schemes such as for solid waste management and urban water supply, tax free status for municipal bonds, etc
- Training and information: by funding a variety of training programmes,
- Creating and disseminating manuals such as the Municipal Solid Waste Planning Manual.

The present form of urban local government owes its genesis to the British rule. The first such body called Municipal Corporation was set up in Madras in 1688, and was followed by the establishment of similar corporations in Bombay and Calcutta in 1762.

Since then, the structure of municipal bodies has remained by and large the same even though the number of urban areas had increased and their problems had become more and more complex. Recent years have witnessed an increasing interest in and growing consciousness of the need and importance of local self-government as a provider of services to the community as well as an instrument of democratic self-government. The **74<sup>th</sup> CAA, 1992**, proposed to form a uniform structure of Municipal Corporations, Municipal Councils and Nagar Panchayats in transitional areas.

Urban local bodies are democratic institutions based on the principle of **self-government** and should represent people's desires and strengths. ULBs offer

- Enhanced opportunities for **people's participation**; local government is closest to the citizens and in the best position both to involve them in the decision making process of improving their living conditions and to make use of their knowledge and capabilities in the promotion of all round development;
- **Bottom-up planning**; and
- **Effective implementation** by enhancing coordination and responsiveness to users

The **74<sup>th</sup> CAA** seeks to introduce fundamental changes in urban local bodies. Its salient features are:

- Introduction of **12<sup>th</sup> Schedule**, which lists the functions of ULBs, covering planning, regulation and development aspects;
- Establishment of **district and metropolitan planning** responsible for election of representatives for the preparation of development plans at district and metropolitan levels;
- Proposed establishment of **ward committees** in areas having a population over 300000;
- Specification by law of the powers and responsibilities;
- Entrusted to municipalities and ward committees;
- Holding of periodic and timely elections;
- Specifying by law the sources of **municipal finance** and their periodic review;
- Restrictions on the power of the state governments to do away with the democratically elected state governments;
- Reservation of 1/3<sup>rd</sup> of seats for women and weaker sections for municipal bodies.

In the face of service challenges, there have arisen **certain roadblocks undermining the reform initiatives**. The ULBs have been confronting **several problems** and there also seems to be a discontinuity between their revenue collection and service delivery outcomes.

The GOI has also begun to respond to the magnitude of challenges facing urban service provision in India. For the cities of India to realize their full potential and become **true engines of growth**, it is necessary that focused attention be given to the improvement of **infrastructure** therein. For achieving this objective **a mission mode approach** is essential. Accordingly, the Prime Minister of India has launched a mission **Jawaharlal Nehru National Urban Renewal Mission (NNURM) on 3<sup>rd</sup> December 2005**. The mission comprises two submissions – 1) **For Basic Services to the Urban Poor (BSUP)** and the other for 2) **Infrastructure and Governance**.

The **JNNURM** will be implemented in select **63 cities** the duration of the mission is for seven years beginning with the year 2005-06.

For other cities/towns two schemes, viz, **Integrated Housing and Slum Development (IHSDP)** and **Urban Infrastructure Development for Small and Medium Towns** have also been launched along with JNNURM on 3.12.2005. The existing Valmiki Ambedkar Awas Yojana (VAMBAY) and the discontinued National Slum Development Programme (NSDP) are subsumed in the IHSDP. The IHSDP implemented by the Ministry of UEPA has been launched with the objective to strive for holistic slum development with the healthily and enabling urban environment by providing adequate shelter and basic infrastructure facilities to the slum dwellers of identified urban areas.

## **Section IV**

### **Conclusion**

On India's onward path to economic development, it is quite inevitable that urbanisation in India would continue for years to come. The unintended cost of increasing urbanization is deterioration in the environmental quality and a pressure on the existing infrastructure, reinforcing a further degradation of the environment. However, environmental degradation is a manifestation of not only urban population pressure but also the changing life styles, which often accompany a rise in income levels of a segment of the population. On the other hand increasing disparities result in impoverishment of the urban poor that also results in deterioration of the urban environment. Today, various interlinked issues are to be addressed on both the environmental and infrastructural front. Features such as neglect of proper disposal of refuse by

households, industry and service providers such as hospitals, and water services have resulted in environmental deterioration. Intermittent piped water supply and ineffective treatment of waste water and industrial waste are resulting in a host of problems including contamination of water bodies and land. Increased motorised transport, unavailability of more road space is not only creating air pollution but increasing the number of accidents and other human miseries. Widening disparities among urban social groups have resulted in deterioration of the urban social environment and increase in crime rates particularly in the big cities.

Urban local bodies, which are entrusted with environmental protection and provision of urban basic services, are often strapped for adequate financial resources as well as knowledge of environmental management. In recent years, however the situation is not as grim as perceived. Supreme Court intervention in limiting air pollution generated by public transport and government initiatives in using green fuels have improved air quality perceptible in some cities. Today thoughts are being made to meet the energy requirements in a sustainable fashion, through the Energy Master Plan (EMP) and this should be integrated with the civil master plan so that the problems arising out of the urban sprawl and multiplication of urban activities are minimized. Awareness about **sustainable development** which includes environmental concerns is gaining grounds and various tools such as **ecological foot printing** and **green accounting** are being developed to ensure the quality of environment that we leave for our next generation is better than that we inherited from the past.



## ***References***

1. Bansal, Alok, et al, (2002), “Urban Transport”, Training Programme on Urban Environmental Management, Volume I, December 2-6, 2002; Indira Gandhi Institute of Development Research, Mumbai.
2. Botkin, Daniel and Edward Keller (1995), “Environmental Science, Earth as a Living Planet”, John Wiley and Sons, Inc. New York.
3. Buch, M.N. (1993), “Environmental Consciousness and Urban Planning”, Orient Longman, New Delhi.
4. Kundu, Amitabh (2006) “Trends and Patterns of Urbanization and Their Economic Implications”, in India Infrastructure Report 2006, Urban Infrastructure, Oxford University Press.
5. Miller, G. Tyler Jr. (1994), “Sustaining the Earth: An Integrated Approach”, Wadsworth Publishing Company, California.
6. Pandey, Suneel, Shaheen Singhal, Pragya Jaswal and Manraj Guliani, (2006) “Urban Environment”, in India Infrastructure Report 2006, Urban Infrastructure, Oxford University Press.
7. Parikh and Vibhooti Shukla, (1995), “Urbanisation, Energy Use and Greenhouse Effects in Economic Development”, Global Environmental Change, Vol 5, No. 2. pp 87-103.
8. Rastogi, Anupam, (2006) “The Infrastructure Sector in India”, in India Infrastructure Report 2006, Urban Infrastructure, Oxford University Press.
9. Reddy, Sudhakara B., (1998), “Urban Energy Systems”, Concept Publishing House, New Delhi.
10. Reddy, Sudhakara B., (2002), “The Urban Challenge”, Training Programme on Urban Environmental Management, Volume I, December 2-6, 2002; Indira Gandhi Institute of Development Research, Mumbai.
11. Shukla Vibhooti and Kirit S. Parikh (1992), “The Environmental Consequences of Urban Growth”, Urban Geography, Vol. 5.
12. Singh, K.P. (ed), (1998), “Infrastructure in India”, National Institute of Management Technology, Ghaziabad.
13. Toutain, Oliver and S. Gopiprasad, (2006) “Planning for Urban Infrastructure” in India Infrastructure Report 2006, Urban Infrastructure, Oxford University Press.

14. Wilderer, Martin Z. (2003), "Economic Growth, Environment and Development: The Significance of the Eco-Industrial Park Concept in India and Indonesia", Manak Publications Ltd, New Delhi.
15. World Resource Institute, (1997), "World Resources, A Guide to Urban Environment", Oxford University Press, New York.
16. Bose, A. "India's Urbanisation: 1901-2001", Tata McGraw Hill Publishing Co. Ltd, New Delhi 1978
17. Sivaramakrishnan, K.C, Amitabh Kumdu and B. N. Singh, 2005, "Handbook of Urbanisation in India: An Analysis of Trends and Processes", Oxford University Press, New Delhi, 2005.
18. Maitra, A. K., 1993, "Managing Urban Environment in India" – Workshop on Role of Cities, Vol II – Times Research Foundation, Kolkata, 1993.
19. Maitra, A. K., 2000, "Urban Environment in Crisis", New Age International Publishers, Delhi, 2000.
20. Mohan, R., 1996, "Urbanisation in India: Patterns and Emerging Policy Issues" in The Urban Transformation of the Developing World; Josef Guglar (ed.), Oxford University Press, Oxford 1996.
21. Mohan, R., 2001, "State of the Environment: India (Report Number 1999 EE45), submitted to the United Nations Environment Programme, 2001.
22. National Institute of Urban Affairs 1998: "Report of the National Commission on Urbanisation, Vol 2", 1998.
23. Ministry of Environment and Forests 1992: "Policy Statement for Abatement of Pollution", GOI, New Delhi, 1992.
24. Ministry of Environment and Forests 1992: "National Conservation Strategy and Policy Document on Environment and Development", GOI, New Delhi, 1992.
25. Ministry of Environment and Forests 1995: "Annual Report", GOI, New Delhi, 1994-1995.
26. Ministry of Environment and Forests 1997: "Minutes of the Consultative Committee of the Members of Parliament Attached to the MOEF", held on August 27, GOI, New Delhi, 1997.
27. Ministry of Environment and Forests 1998: "White Paper on Pollution in Delhi with Action Plan", GOI, New Delhi, 1998.

28. NEERI, 1998, "Introduction of Environmental Economics into Decision Making for Sustainable Development: Air Media", Project Report submitted to IGIDR under Capacity 21 Project, 1998.
29. Parikh, Jyoti and Kirit Parikh, 1999 "Accounting and Valuation of Environment, Vol II – Case Studies from the ESCAP Region", ESCAP publication 1999.
30. Centre for Science and Environment, 1996, "Slow Murder: The Deadly Story of Vehicular Pollution of India", New Delhi, 1996.
31. Ministry of Urban Development, 1987, "Report of the Study Group of Alternative Systems of Urban Transport", GOI, New Delhi, 1987.
32. Opinion Survey, 1998, "Pollution in Delhi Threatening to get Out of Hand", Monthly Public Opinion Survey, March 1998.