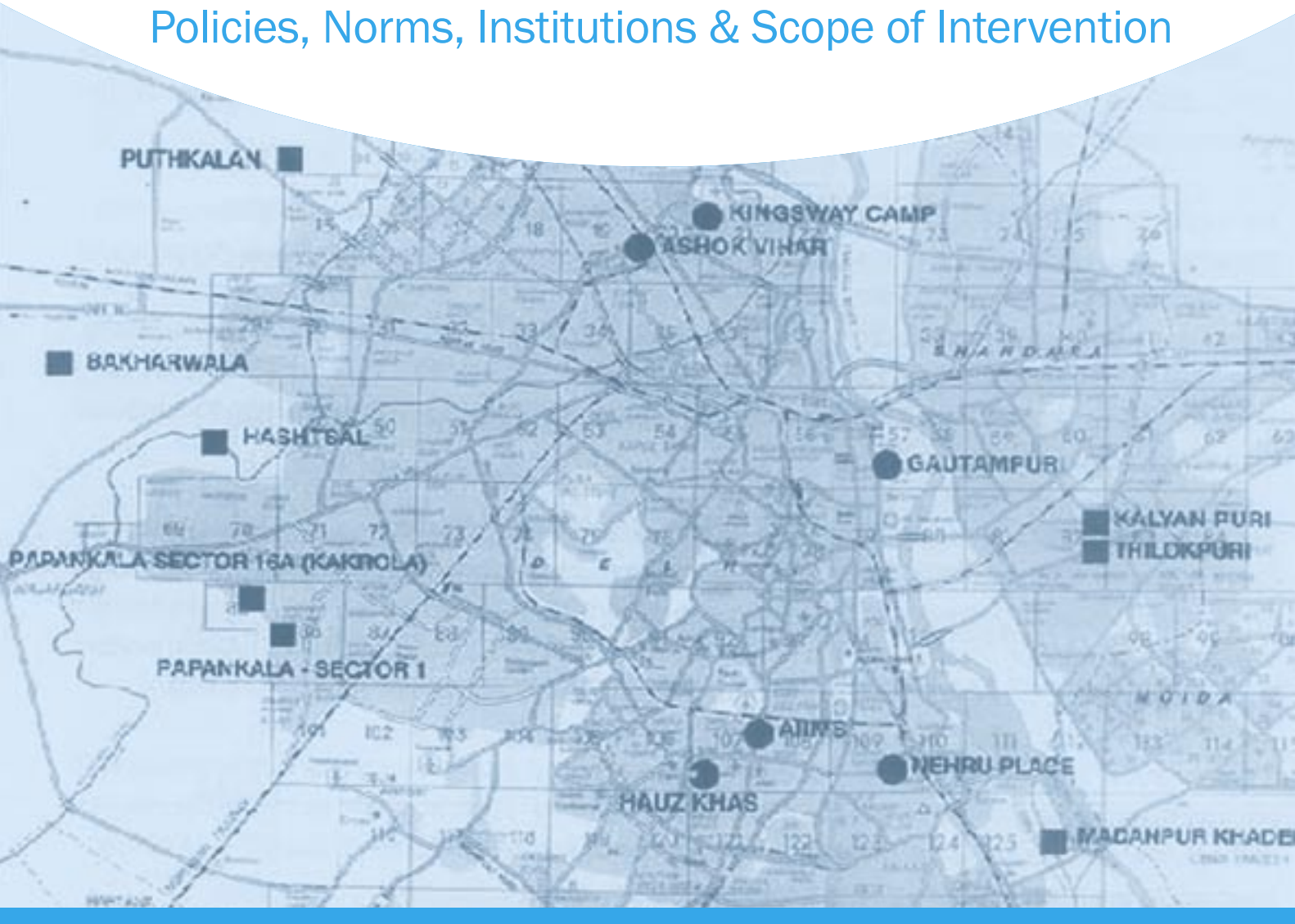
WaterAid

# Profiling
# "Informal City"
# of Delhi

## Policies, Norms, Institutions & Scope of Intervention




WaterAid India
2005

# Profiling "Informal City" of Delhi

## Policies, Norms, Institutions & Scope of Intervention

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# Foreword

The term “Informal city” is a polite expression, often used to describe a substantial section of the city population living in slums, unauthorised colonies, resettlement colonies and urban villages, mostly in sub human conditions. In case of India, it covers as high as forty per cent of urban population. Barring the case of the national capital, a few state capitals and industrial cities, the State has not taken up the responsibility of planned development of cities and towns. The process of urbanisation in the country has, therefore, remained largely market driven, even after the country’s liberation from colonial rule and much hyped model of “socialistic pattern of development”.

Importantly, the democratic socio-political structure in the post-Independence period allowed the poor to gain entry into the urban centres but they became some kind of “illegal settlers”. The political space provided through the competitive politics of elections enabled them to secure a foothold but either in urban fringe or low valued land within the city. Importantly, the building of cities, running its economy and maintaining its services require labour. This ensured entry to the poor but they could live there only as temporary squatters or slum dwellers, under perpetual threat of eviction.

The case under study is the national capital which grew under the protective umbrella of the State, as noted above, at least during the first couple of decades after Independence. An analysis of the data over the past few decades suggests that the Delhi urban agglomeration and its surrounding towns and villages have experienced rapid population growth. This is primarily due to its strong economic base, which has grown even stronger over the years due to the rapid growth of industries and commercial activities.

The central city, however, has succeeded, although partially, in diverting population growth to geographic or socio-economic “periphery” of the metropolis. Large sections of poor migrants have been absorbed either in the hinterland or in the marginal areas within the agglomeration viz. sides of railway tracks, around factory sites, swampy lands etc, wherein the quality of life is low. Using instruments such as master plans, environmental legislations, slum clearance/ rehabilitation projects etc, the state has off and on pushed out informal settlements to the “periphery”. It has thereby successfully carried out a process of sanitisation. Functioning of informal land market, too, has facilitated a process of socio-economic segmentation through population redistribution within and around the city.

Micro-level surveys reveal that low-income groups residing in outlying towns and villages or in marginal areas in central city are paying heavy environmental costs. The peripheries have reported serious problems of physical congestion and economic deprivation that have been accentuated over the years. There seems to be a process of institutionalisation of socio-economic segmentation and unequal sharing of developmental benefits within the agglomeration.

Despite this hostile market scenario and a passive state policy, a small section of the poor have discovered ingenious ways of finding a shelter in and around the central city through establishment of linkages with slumlords, government functionaries and politicians. A few among the new migrants, too, have been able to gain a foothold here. This, however, has been possible generally in informal settlements, located in marginal lands, as noted above. The governmental programmes of *in situ* upgradation, in operation in an *ad-hoc* manner and for

short durations, have directed and indirectly supported the initiative or entrepreneurship of these people to hold on to their plots.

Understandably, these poor people have come to enjoy a sense of perceived security, due to no major relocation or eviction, taking place during two decades after 1977. This has given a boost to the growth of slum population in certain areas within the city. Relaxed attitude of the officials towards wide-scale violation in the Master Plan and bye-laws has also facilitated the process. These people have, indeed, benefited from the employment and income opportunities in the central city. They have had access to a few of the basic services, due to their proximity to formal colonies or extension of the services through the latter. Many among them have improved their quality of life by making investments in housing and basic amenities.

The scene, however, has changed during the past decade. The exhaustion of political space, which enabled the poor to hold on to their land, is evident from the large scale relocation or removal of slum dwellers from central parts of Delhi. Interestingly, this has happened without any violent resistance from slum dwellers. This does not mean that the relocation have been welcomed by them (who suffered immensely by loosing their proximity to sources of livelihood), but that their political will to resist has been broken. Measures of globalisation have led to massive capital inflow in industries and infrastructure. Unfortunately, betterment of socio-economic conditions of the poor or providing access to basic amenities has not figured importantly as a key concern.

There have been orders from the High Court and the Supreme Court leading to eviction of slum colonies and industries. These in turn have shattered the “perceived security” of tenure of both slum dwellers as well as informal entrepreneurs. There is a growing realisation that social and political connections, informal assurances, host of semi-legal documents, etc are not of much use in the event of a Court order. In fact, many of the industrial units had to close down or move to neighbouring towns or villages, despite their having formal or informal “approvals” from the different departments of the local government and paying certain “fees” thereof. Importantly, it is the small entrepreneurs who lost out on account of this since the large entrepreneurs mostly benefited substantially by using their factory plot for speculative purposes. This environmental activism has thus led to large scale joblessness among the urban poor in Delhi.

Undoubtedly, all these have improved the quality of the environment in several high income residential areas. Nonetheless, the impact on the peripheral areas, where the dislocated industries and slums have been relocated, has been extremely negative. Importantly, environmental monitoring in these areas is extremely relaxed and amenable to manipulation as there is neither a strong local body nor public awareness. All these have led to an accentuation of core-periphery differential in terms of economic and social wellbeing and quality of micro-environment.

The story of demographic and economic growth in the national capital city through the past five decades has the moral that the slum dwellers can improve micro-environment through their own initiatives and resources, if certain minimal support from public agencies, along with some kind of security of tenure, is granted to them. Unfortunately, this perspective does not seem have many takers in the present globalising policy environment, manifest in recent spurts of eviction in the national capital (as also other metropolises in the country). This raises very many important policy questions. Should the government, withdrawing from the provision of civic amenities, in the wake of programmes of structural adjustment, not encourage people to come forward and shoulder this responsibility? More importantly, shouldn’t the poor be able to find a place in the fast globalising cities, rather than being pushed into degenerating peripheries or distant hinterland? Should the planners not be made aware of the dangers of allowing concentration of the poor and polluting industries in the fast degenerating periphery, in terms of outbreak of epidemics and proneness to group violence?

It is a matter of great satisfaction that the present study undertaken by WaterAid India tries to address the above questions. The key concern in the volume is the accentuation of intra-city inequality and exclusion of the poor from well-off colonies in Delhi. It addresses the issue of

growing intra-city disparity and concentration of poor in the peripheries. It expresses concern over the decline in the rate of absorption of the poor migrants in the city.

The strongest point of the study is that it attempts to understand the context in which the urban poor come to Delhi and live there. It also analyses the potential programming options. Understandably, it has reviewed urban development programmes and projects, functioning of institutions and policies, trends in terms of access to minimum services (water and sanitation). The authors analyse the problems of exclusionary urban growth within a macro economic framework. They recognise that the significant spatial inequality in micro-environment must be bridged. And this can happen only when the state plays a major role in improving basic services, particularly in low income colonies.

The urgency of adopting this approach cannot be over emphasised – not merely in Delhi but also other metro cities in the country. The study argues that the civil society in the city will have to play a watchdog role, quite different from what it has done in the recent past. Supporting grass-root organisations and strengthening the Ward Committees that are the Constitutional units (as opposed to Resident Welfare Associations) is the way forward to address the challenge of exclusion of the poor, the impact of which could be catastrophic. The planning authorities in the metropolitan region must launch, through financial and institutional support from higher levels of governance, measures for generating employment and income opportunities in the "marginalised periphery" while ensuring compliance of environmental controls in location of industries. Also, regional authorities should ensure provision of reasonable levels of basic amenities in the towns and villages on the fringe so that the process of degenerated peripheralisation can be stalled.

This is the part of a series of studies to be undertaken by WaterAid India to assess the urban context and provide a framework for long-term urban programmes and projects. It provides, in one compact volume, the features of urban settlements in Delhi, socio-economic trends at macro level and the administrative and policy issues. It may be pointed out that WaterAid India works on limited areas like drinking water, sanitation and hygiene promotion. However, since the access of these basic services is determined by the living conditions and livelihoods of the urban poor, WaterAid India has taken a larger macro perspective in addressing its core concerns. The second part of the study is focused on select wards of Delhi, examining specifically the status of water and sanitation in poor wards and low income peripheral settlements. Together with the second part of the study, the organisation will hopefully be in a position to develop its strategy and programmes and schemes for interventions.

Prof Amitabh Kundu
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Kishore K. Singh
Shikha Shukla

# Abbreviations

| | |
|---|---|
| ADB | Asian Development Bank |
| BPSs | Booster Pumping Stations |
| CPCB | Central Pollution Control Board |
| CPWD | Central Public Works Department |
| DCB | Delhi Cantonment Board |
| DDA | Delhi Development Authority |
| DFID | Department for International Development |
| DJB | Delhi Jal Board |
| DMC | Delhi Metropolitan Council |
| DoLD | Department of Land Development |
| DoT | Department of Transport |
| DPCB | Delhi Pollution Control Board |
| DTC | Delhi Transport Corporation |
| DUEIIP | Delhi Urban Environment and Infrastructure Improvement Project |
| DVB | Delhi Vidyut Board |
| EIUS | Environmental Improvement of Urban Slums |
| GoI | Government of India |
| GSS | Global Shelter Strategy |
| HLRN | Habitat International Coalition's Housing and Land Rights Network |
| HSMI | Human Settlement Management Institute |
| HUDCO | Housing and Urban Development Corporation |
| LPCD | Litres Per Capita Per Day |
| MCD | Municipal Corporation of Delhi |
| MGD | Million Gallons Per Day |
| MLD | Million Liters Per Day |
| MNCs | Multinational Corporations |
| MoR | Ministry of Railways |
| MoUD | Ministry of Urban Development |
| NCRPB | National Capital Region Planning Board |
| NCU | National Commission on Urbanisation |
| NDMC | New Delhi Municipal Corporation |
| NGOs | Non Governmental Organisations |
| NHP | National Housing Policy |
| NRY | Nehru Rozgar Yojana |
| OECF | Overseas Economic Cooperation Fund |
| PMRY | Prime Minister's Rozgar Yojana |
| PWD | Public Works Department |
| SJSRY | Swarna Jayanti Shahri Rozgar Yojana |
| SLFs | Sanitary Landfill Sites |
| UBSP | Urban Basic Services for the Poor |
| UGRs | Under Ground Reservoirs |
| ULB | Urban Local Bodies |
| UN | United Nations |
| UNCHS | United Nations Centre on Human Settlements |
| UPA | Urban Poverty Alleviation |
| USAID | United States Agency for International Development |
| WTP | Water Treatment Plant |

# Executive Summary

Over the centuries, the concept, size, population, needs as well as literary depictions of cities have undergone a remarkable change in most parts of the world. Cities are acquiring an economic, cultural as well as literary identity of their own; independent of the identity of the country in which they are located.

The world took 1800 years to reach its first billion population; 130 years to reach the second billion, while it took just 60 years to cross the five billion mark. At the onset of the present millennium, for the first time in human history, more than 50 per cent of the world's population was living in urban areas. According to the United Nations, cities in developing countries are growing by over one million people a week. The World Bank estimates that there were some 500 million poor urban dwellers in the year 2000, based on its "one-dollar-a-day" income-based poverty line; worldwide, 30 per cent of poor people live in urban areas.[1]

Economists and policy-makers now acknowledge cities as 'engines of growth', an indicator of development and a major contributor to national economy; it is apparent that it is accompanied by growing disparities as well. In the context of many Asian countries, building of cities and its economy led to the growth of informal cities, which cater to the day-to-day services required for a planned city. Cities attract large number of workforce for its development without creating any facilities for them, hence emerge informal settlements of workers and service providers.

Notwithstanding the contributions of urban poor, all key policies,[2] most legislations[3] and almost all institutions have seemingly favoured the marginalisation of the urban poor in Indian cities. A rather disturbing trend of the spatial exclusion of the poor has been observed in all metropolises, irrespective of the political ideology of the ruling party. The poor are being pushed out of the city to areas where services are poor, investment is low and livelihoods opportunities are few and far. Reduced state expenditure on welfare schemes and subsidies, along with cut backs in employment and privatisation of basic services has further increased the vulnerability of the urban poor. These basic services have not kept pace with the rapid growth; hence as high as 50 to 60 per cent of the population of large cities live in informal/ sub-standard settlements. The iniquitous distribution of resources, including land for housing, civic services and economic opportunities, have widened the gaps between the "planned city" and the "informal city".

Since Independence, policies, institutions and programmes to combat urban poverty have not followed a straight course. There is a lack of clearly articulated policy and institutional framework for urban poor and their shelter; while the National Slum Policy was drafted in 1999, it hasn't yet been tabled in the Parliament. The Department of Urban Poverty Alleviation has been clubbed together with and separated from the Ministry of Urban Development three times, since the creation of the Ministry. Most schemes/programmes for urban poverty

[1] Satterthwaite David, Sept. 2001 Rural and Urban Poverty: Understanding the Differences, Global Poverty - Economic Perspectives, p.1

[2] Five-Year Plans of Government of India and Master Plans of Cities

[3] The Public Premises (Eviction of Unauthorised Occupants) Act, 1971; Urban Land (Ceiling & Regulation) Act, 1972; The Requisitioning and Acquisition of Immovable Property Act, 1952; Slum (Clearance and Improvement) Act, 1955)

alleviation have been targeted at different interest groups, and/or been redefined at the state level where local politicians and bureaucrats have sought to put a local spin on centrally driven programmes, or to develop their own.

Data on water and sanitation coverage and quality in urban areas is fuzzy and statistics on coverage of urban slums in many cases does not exist. The coverage of drinking water in urban areas was reported to be 91 per cent in the 55th round of the National Sample Survey (NSS) in 1998-99. However, only 59 per cent of the urban population received drinking water from a public source, which they did not have sole access over.[4] According to the 54th round of NSS 62 per cent of urban household reported having their principal source of water within premises and 32 per cent had it within 0.2 km. The acute gap in provision and poor quality of basic services and amenities in these settlements result in hazardous environmental sanitation conditions that have the potential risks of resulting in an urban disaster.

The 74th constitutional amendment added a new dimension to urban governance by empowering the urban local body (ULB). It envisaged a key role for ULBs in planning and monitoring urban services and raising resources through tax and non-tax revenue. The Tenth Five-Year Plan observes that urban governance is characterised by fragmentation of responsibility, incomplete devolution of functions and funds to elected bodies and ULBs; unwillingness to progress towards municipal autonomy, outmoded methods of taxation and reluctance to levy charges. State governments keep taking decisions on matters of taxation.[5] Weak municipalities, resource scarcity, relative reduction of capital expenditure on infrastructure and social sectors have created serious scarcity and inequity in provisioning basic amenities to urban population, particularly the poor. It is now realised that transferring power to municipalities without developing institutional capacity to raise resources for planned development or expecting them to raise resources from the market may not be a desirable option.

The assistance from multilateral and bilateral agencies, along with international NGOs (INGOs) extended to urban sector projects was about USD 2,300 million during 2000. This is only 9-10 per cent of the estimated investment requirements for urban infrastructure over 1996-2001. Only urban poverty alleviation (UPA) programmes and select components of the assistance for urban water supply and sanitation and housing projects are targeted directly at the poor. But not more than eight per cent of the total on-going external assistance is directed towards UPA programmes.

## II

In the given backdrop, with a purpose to explore the scope and rationale for programmatic intervention as well as a policy framework for adequate water and sanitation services in low income urban and peri-urban settlements of Delhi, this study analyses policies, institutions and programmes impacting the urban poor of Delhi in general, and those living in two peripheral wards of the city, in particular.

The choice of the city has largely been determined by its unique legislative, administrative, demographic characteristics and complex legal status of informal settlements, which make it a challenging terrain for any development initiatives by the government and civil society organisations. As it is said that if any approach is successfully implemented in a city with multiple authorities like Delhi, there may be little difficulty in its replication or adaptation elsewhere.

Delhi has the distinction of being the most urbanised state in the country, 93 per cent (12.81 million) of the population lives in urban areas whereas only 7 per cent (0.96 million) lives

[4] Tenth Five-Year Plan,2001, P.626

[5] Tenth Five-Year Plan Document, Chap.6.1, pg 611

in rural areas.[6] Delhi with a population of 13.78 million[7] is the third largest[8], the fastest growing and most densely populated city in India. Delhi has been growing by approximately 1,000 persons every day for a number of years. Migration has roughly averaged 1.3 times the natural growth in Delhi.

The city has witnessed an increase of population at a phenomenal rate of 4.6 per cent annually (1991-2001), double of the national average of 2.34 per cent and more than the urban growth rate of any city of the country. The density of population, 9,294 persons per sq. km. as per Census 2001, is the highest in the country. The state of Delhi sprawls in an area of 1,486 sq kms, of which the developed urban area is 525 sq kms. Thirty five per cent of the total area and urban extensions as well as the urbanised rural area are spread over 961 sq. kms. As Delhi swells due to a large influx of migrants from smaller cities, towns and rural areas with unmatched provision of housing and basic amenities, 'informal settlements' increase in numbers, sizes and densities.

In 1999, there were over 1,100 slum clusters[9] with an estimated population of 32 lakhs.[10] Additional to this were 1,500 unauthorised colonies with an estimated population of 35 lakhs, 52 resettlement colonies and 216 urban villages with estimated population of 20 lakhs and 6 lakhs respectively.[11] Thus, in 1999, more than 103 lakh people, i.e., 78 per cent of the city's population were living in marginal/sub-standard settlements. In the last five years, there has been large-scale relocation of "informal settlements" from various parts of the city to the periphery, which has resulted in a concentration of slum population in the peripheral wards. Many resettlement colonies in these peripheral wards on city borders or outskirts narrate the story of demolition, relocation and a systematic process of marginalisation of the urban poor whereby they have been shifted from the core of the city to its periphery. The resettlement process has violated right to shelter on all its parameters.[12]

Rapid population growth and high density are causing tremendous stress on existing land, housing, infrastructure facilities (water, sewerage, solid waste management, electricity) and services (health, education, public distribution systems, etc). Data reveals huge gap between the needs of the poor and services provisioned to them by the city authorities and these gaps are increasing at a phenomenal rate.

Delhi alone contributes around 3,296 MLD (million litres per day) of sewage by virtue of drains falling in Yamuna, even half of it is not treated before draining into the Yamuna. This amount of sewerage is more than that of all the Class II cities of India put together. In 1996, the amount of waste generated was estimated at 8000 tonnes per day, out of which 30 per cent remained uncollected.

Since Independence Delhi's urban growth and city management has largely been determined or influenced by the approach, policies and strategies of the central government. Delhi has been an experimentation ground for many kinds of local institutions and political set-ups without having any autonomy of their own. The city has ended up being "over-governed" by all three levels of governance (National, State and Local). There is multiplicity of authorities with overlapping responsibilities/functions. The city lacks good governance despite the existence of 118 line departments responsible for city management, three planning boards for city and regional planning, namely, National Capital Region Planning Board (NCRPB), Delhi

[6] Census 2001

[7] Ibid

[8] Mumbai is the largest city and Kolkata the second largest in terms of population

[9] Jhuggi Jhopri Clusters

[10] Slum Department of Municipal Corporation of Delhi (MCD)

[11] Slum Department of Municipal Corporation of Delhi (MCD)

[12] Restructuring New Delhi's Urban Habitat: Building an Apartheid City, Housing and Land Rights Network and Habitat International Coalition, 2000

Metropolitan Council (DMC) and Delhi Development Authority (DDA). There are a number of service providers for Delhi, namely, Municipal Corporation of Delhi (MCD), New Delhi Municipal Council (NDMC), Delhi Cantonment Board (DCB), Delhi Jal Board (DJB), etc.

The direct control and interference of the Central Government in the city's administration denies the right of citizens to participate in city governance and renders constitutional belief of decentralised 'local self governance' expressed through 74th constitutional amendment meaningless. While Delhi's citizens elect their municipal councilors and MLAs and seek their help in addressing their needs of land security and services, all important decisions regarding city planning and management of land and municipal services continue to be taken by officials and legislative heads appointed by the central government. The town planning department of the MCD still holds the key, to the entire development of Delhi, having prime significance in the interpretation and correct implementation of the Master Plans and Land Use Regulation, as well as in the field of urban planning. It definitely plays a more important role in planning and implementation of Master Plan than the Government of National Capital Territory Delhi (GNTCD).

III

The current study further aims to analyse how the policy environment and the institutional functioning in the city have impacted the coverage and quality of basic services and shelter of the urban poor communities in peripheral wards of Delhi. Low investment, fewer economic opportunities for the poor and lack of any planned development approach has made these areas the most vulnerable; while the future will see more concentration of the urban population in these areas of the city.

Aimed at profiling the informal settlements for proposed intervention by WaterAid India, this study selected two electoral wards of Delhi namely, Bhalaswa (Ward No. 103) and Badli (Ward No. 34) located in the north-western extremity of the city. Through an in-depth study of eight informal settlements including JJ clusters[13], unauthorised colonies, resettlement colonies and urban villages; located in two wards[14] of Delhi, the study identifies issues related to access and quality of basic amenities and facilities, as well as environmental risks and hazards resulting from poor environmental sanitation.

Bhalaswa, a small village till 1950s has been in news for more than one reason – for its large horse-shoe shaped lake once a part of the Yamuna river course and now reduced to an area of only 70 hectares; for large resettlement colonies in Jahangirpuri; its 78 acre overflowing non-technical sanitary landfill site since 1992 on the dry bed of the lake; for an international standard and well equipped Golf Course (2003) on 120 acres of land and, now most recently, for its environmentally unfit relocation sites accommodating slums from the 'core city'.

Badli was planned as one of the 27 industrial areas during the first Master Plan 1962. Being an industrial and commercial area it is known for all the economic opportunities, population and hazards that these industries bring. Located on a junction of highways leading to major commercial cities, the industrial area of Badli also has large-scale transport activities and, hence a large settlement of transport workers.

The study validates the trend of recent times whereby the urban poor driven from the core of the city are being absorbed in different types of informal settlements of city's degenerated peripheries.

The study finds that 97 per cent of the population in Bhalaswa and 80 per cent in Badli wards live in informal and under served settlements like JJ clusters, unauthorised colonies, resettlement colonies, urban villages and a few in rural villages in Badli ward. However,

[13] Jhuggi Jhompri Clusters

[14] Electoral Wards

the number and types of settlements as well the population densities in different types of settlements vary significantly.

Presence of a large number of informal community groups – SHGs, community watch groups, youth clubs apart from CBOs like Nirman Majdoor Panchayat Sangam in Badli and Bhalaswa Lok Shakti Manch can provide impetus for large-scale changes in the area, provided they are brought together and enabled to address the key issues like land tenure and environmental improvement in the area.

## IV

The primary research which covered eight informal settlements located across two wards (Badli and Bhalaswa) involved conducting community-based assessments of the current situation, problems and resources. A sample household survey was conducted which covered 20 households in each of the four informal settlements. Focus Group Discussions (FGDs) were also conducted in each settlement, covering approximately 25 participants drawn from various segments of the community.

**Population and demographics:** The sample household survey reveals an average family size of five persons per family; a significantly high proportion of dependant population; and a low sex ratio. Majority of households in all types of informal settlements have the head of their household self-employed, of these majority are in the unorganised sector.

**Housing:** Majority of households surveyed in the different types of informal settlements have *pucca* housing. In JJ clusters and unauthorised colonies some proportion of the housing stock is *kutcha*, the same can be attributed to lack of security of tenure. JJ clusters also have the smallest sizes of dwelling units with large proportions of the houses having dimensions of 10 feet x 10 feet. In unauthorised colonies, resettlement colonies and urban villages the dimensions of the houses surveyed are more than or equal to 15 feet x 15 feet. A little over half of the households surveyed have more than two rooms in their dwelling units, while JJ clusters predominantly have one-room tenements, majority of the houses in unauthorised colonies have tenements with more than two rooms.

**Water:** Informal settlements depend on community level sources for water supply. In JJ clusters and resettlement colonies, community standposts are the main water supply sources; in unauthorised colonies, it is handpumps and tankers, while in urban villages the main sources are piped water supply by DJB and handpumps. The average duration of water supply in informal settlements is one to five hours a day. Households dependent on tankers for water supply have no fixed timing or duration for supply. Although the households dependent on handpumps have supply for 24 hours they have to cope with the poor quality of water due to contamination of groundwater in these areas. Households that are dependent on community level water supply sources have to spend one hour or more to fetch water, while households having access to individual connections do not have to waste time for collecting water, but they have to waste sleep since the supply time is not assured. In all the different types of informal settlements covered under this study the residents reported a poor quality of water supply. Very few households make payment for water supply; there is however, a high level of readiness to pay if provided improved services.

**Toilets:** Community and individual toilets are sanitation facilities used by adults in informal settlement. In JJ clusters adults depend on community level toilet facilities and a significant proportion of households are forced to defecate in the open due to inadequate provisions/poor maintenance of the toilets. In unauthorised colonies, adults depend upon community as well as individual toilets. In the case of resettlement colonies and urban villages majority of the households have individual toilets. With respect to sanitation facilities accessed by children in informal settlements, in JJ clusters majority of the children defecate in the open due to lack of child-specific toilet facilities. In unauthorised colonies, resettlement colonies and urban villages, majority of the children use individual household

level toilet facilities. All individual toilets in informal settlements are based on inappropriate and redundant disposal mechanisms (septic tank, disposal in drains) which are creating poor environmental conditions within the community and in its neighbourhood. In settlements that are dependent on community toilet facilities the ratio of persons per toilet seat is very high and many times (24 times) the acceptable standards. Very few households that are dependent on community toilet blocks for their sanitation needs make payment for using the toilet and for its operation and maintenance costs. With respect to the preference for toilet facilities, in settlements that have access to community facilities majority of the households indicated their preference for individual toilets while in settlements that have individual toilets the households aspire for the toilets to be connected to the city level sewerage system to do away with the poor environmental conditions prevailing due to inappropriate disposal.

**Drainage:** Informal settlements have different types of drainage systems, namely, open *kutcha* and open *pucca*. The frequency of cleaning of the drains varies from daily to monthly with majority of the households reporting that the frequency of cleaning drains was weekly. There are different actors involved in the maintenance of the drainage system in informal settlements including municipality, private sweepers and community. Despite the presence of these multiple agencies there is a high level of dissatisfaction among communities with respect to the type of drainage system and its maintenance.

**Solid Waste Management:** There is an absence of an organised system of garbage collection by the municipal authorities in all the slums surveyed in the two wards. Majority of the households are indulging in dumping of garbage at a variety of locations including by-lanes, drains, *nallas*, open area, near toilets, and in municipal bins. The communities voiced their dissatisfaction with the low and irregular frequency of clearance of garbage by the municipal staff.

**Health:** There is a significantly high level of non-attendance from school (for children) and work (for adults) due to diseases/infections resulting from poor environmental sanitation conditions. Poor health status of children and adults also has financial repercussions for slum households as a proportion of the monthly income is spent on accessing private health care facilities due to inaccessibility and poor service of public sector health care infrastructure.

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The existing situation in slums of Delhi or in any other city is in complete contrast to the global concerns, consensus and strategies that emerged in Habitat I & II as well as the universal declaration of human rights to which India is a signatory. These international agreements recognise the people's right to shelter, their participation in local governance, right to life and dignity. While in reality, most policies, legislations and programmes of land control, urban planning, infrastructure development have gone in the favour of citizens of planned city and, in order to develop city for the rich and middleclass there has been a long history of relocation of poor from the planned areas.

In this backdrop the strategy for intervening for an international agency like WaterAid India needs to be strategic and complimentary to the ongoing initiatives. Most recent participatory research with poor communities have indicated water and sanitation as the most prioritised need, and there is a complete absence of systemic intervention by local NGOs, that can inform the infrastructure planning and reform processes.

This study recommends intervention through networks of NGOs at the city/state, inter-ward and ward level interventions to address the underlying causes of vulnerability of people living in informal settlements. For influencing the issues like land tenure, pro-poor master plan, district plans, resource allocation and expenditure of selected wards and development programmes, a city level network and a forum for dialogue among key stakeholders will be required for improving the fringe areas of the city. A serious dialogue among civil society, urban experts, sensitised city authorities and policy-makers, along with other key stakeholders, are required to work out other final details.

As a pilot initiative, it may be appropriate to follow a bottom-up approach and ward level intervention to improve urban governance processes impacting environmental services in slums. Since bilateral and multilateral agencies like JBIC and World Bank, are already working with city authorities for infrastructure development and sector reform respectively, WaterAid India's bottom-up participatory process in informal settlements to inform the ongoing infrastructure development and sector reform processes, as well as for improving current environmental conditions, may be strategically complimentary. This will help to fill the current programmatic vacuum in the city for creating structured dialogue between civil society, city authorities and other key players on needs, required and current provision and current status of environmental services in informal settlements and how can local residents participate in planning interventions, what they can contribute and what more they require to improve their environmental conditions.

The second phase of intervention, after a few years of stabilising the initiatives, may focus on sustaining the community-based organisation and their processes, apart from the forum created at city level. The most crucial addition in this phase of the programme could be community-based monitoring of gaps in policies, legislations and institutional functioning. The bottom-up approach, a long enabling process of analysing and disseminating data and a continuous dialogue would facilitate the preparation of a concrete ground for policy dialogue with city authorities.

CHAPTER 1

# Expanding Urban Arena: Issues and Interventions

## 1.1 Changing Complexion of Urban Centres

### 1.1.1 Changing Facets of City's Faces – An Introduction

"The modern metropolis has an epic sweep, with its many worlds both coexisting and colliding. Its juxtapositions, the poignancy of its unsung heroes and their immense isolation amongst the crowded street, rather like Coleridge's ancient mariner with 'water-water everywhere; Not any drop to drink' reveals life at its powerfully ironic.... The rickshaw puller, the bar girl, the taxi driver emerge from the choruses of grand heroes as icons of everyday existence-plebian yet potent... The metropolis is a complicated character – no blacks and whites here, it is a virtual riot of colour – a montage of joys and miseries."[1]

This image of cities is new and unique; seldom found in the fictions and stories of Charles Dickens and Anne Tyler. Over the centuries, cities in most parts of the world have acquired an identity that no longer bears resemblance to literary description. In fact, they have come to possess an identity that is no longer tangent to national culture and boundaries. Cities with its people and places – in the developed as well as developing countries are themselves becoming protagonists in literary descriptions.[2] This face-lift in the image of cities may be the larger manifestation of the changing concept, size and population, needs and the role they play in the economic and social transformation of nations. These cities are no more administrative cum commercial centres under the spell of religious and cultural forces of pre modern era. Functionally, it is no more integrated space for living, playing, studying, working, marketing and trading and for carrying other activities. Now these functional areas of our associations are miles apart, especially in bigger cities.

Cities generally carry an image of rapidly growing and high density population and multi-storyed buildings, exploding markets, congestion, pollution, poverty and unemployment, unauthorised settlements/slums, chronic shortages of basic urban services, lack of community feeling and petty crime. On the other hand, economists and policy makers now acknowledge cities as 'engines of growth', an indicator of development and a major contributor to the national economy; it is apparent that it is accompanied by growing disparities as well. In the context of many Asian countries, building of cities and its economy led to the growth of informal cities, which cater to the day-to-day services required for a planned city. The requirements of their diversified services indicate the relevance for this section of urban population that contributes significantly to the formal and informal sector of the cities. But most city development plans have more often lead to underdevelopment of urban poor, as any large-scale infrastructure expansion in the cities of developing country attracts vast number of workers from neighbouring areas. Cities invite large number of workers for their development without creating any facilities for them, hence emerge informal settlements of workers and service providers. Over a period of time the informal tenements swell in population as new migrants settle in there.

The exclusion of urban poor in these settlements, from the policies as well as urban planning, leads to iniquitous distribution of resources between the habitants of formal and informal

[1] Choudhary, Sonya Dutta, Nov.7, 2005, The Hindu, a review of new genre of non-fiction on cities like Delhi by William Dalrymple' "City of Djinns" and Bombay by Pinky Virani's "Once was Bombay".

[2] Ibid.

cities. In recent decades the gaps between them have widened. The macro economic processes of globalisation have further marginalised the urban poor, making them more insecure and vulnerable. Statistical data compiled globally indicate that measures such as cut backs in employment, rising expenditure, lack of social safety nets, stagnant wages, especially in the unorganised sector, have revealed the vulnerability of the urban poor to economic change.

### 1.1.2 City and its Poor: A Testing Ground for Concepts and Approaches

In recent decades, growing cities and towns in developing countries, by their sheer complexities, have offered reasons to delve on different dimensions of urban poverty, its trends and issues. At the same time, they also proved testing ground for many approaches, analytical frameworks and strategies adopted to alleviate or reduce urban poverty.

In some views rural and urban poverty are interrelated for they have many structural causes in common, though the manifestations and conditions of poverty vary to different degrees. The structural causes include socially constructed constraints to opportunities (class, gender) and macro-economic policies. Many point to the important connections between the two, as household livelihoods and survival strategies have both urban and rural components. The urban-rural divide is considered by many more as a continuum than as a rigid divide.

There are a number of ways to define poverty in general, and urban poverty in particular, and how to best measure it in a population. Conventional economic definitions use income or consumption complemented by a range of other development indictors, such as life expectancy, infant mortality, work participation, nutrition, domestic budget on food, access to services and common index of welfare. A broader definition defines poverty as the lack of command over commodities exercised by a population. A still more sophisticated definition is based on the capability of the poor to function in society. This latter approach to defining poverty takes into account the functioning of a group and the degree to which it commands social capital, paying attention to what members actually do as opposed to what they can do. Social planners and anthropologists, viewing urban poverty from real conditions, diverse contexts and different dimensions expand the definition to encompass other vulnerability factors and non-material deprivations and social differentiations that inhibit development of urban poor. They attach great value to qualitative dimensions such as security, self-respect, identity, freedom and opportunity to participate in decision-making and exercise political and legal rights. “Definitions of poverty based on income levels don't reflect the many forms of deprivation that factor into rural and urban poverty; with the result that nations and multilateral organisations underestimate how many people live in poverty and in what conditions. Programmes to help reduce poverty targeted to either urban or rural population – should reflect the diversity and complexity found within and among local contexts.”[3] Many agreeing with this thought for programming interventions in the local contexts, find it difficult to collect any reasonable data at macro- and meso-levels.

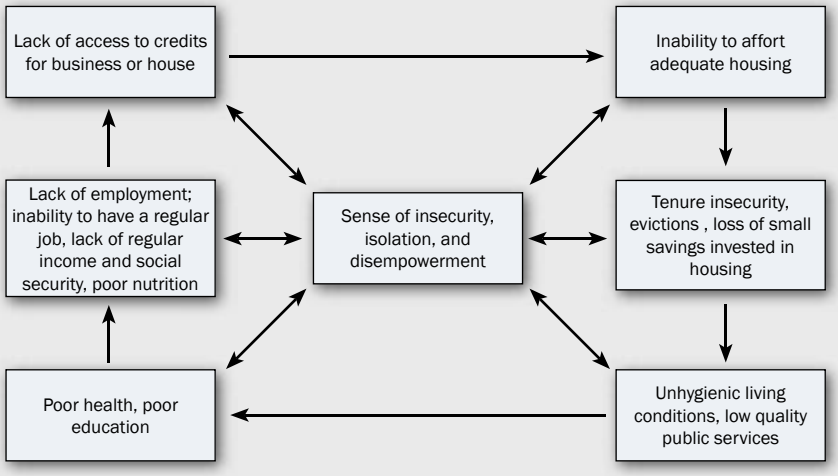
The rights-based approach looks at urban poverty in general as a more relative concept, wherein the causes of poverty are understood to be underlying structural inequalities and inherent disadvantages that hamper access to even existing resources and assets. Looking at poverty through a rights lens enables a richer understanding of the different dimensions of poverty, and encourages a more comprehensive policy response to the structural causes of poverty. Various deprivations, eg, lack of access to employment; adequate housing and services, social protection; and lack of access to health, education and personal security, faced by the urban poor are manifestations of the structural causes that vary in different contexts.

For programming and operational purpose the World Bank document offers two analytical frameworks, i.e., dynamic framework of poverty (vulnerability and asset ownership) and multiple characteristics of poverty and its cumulative impacts[4] for understanding poverty. In

[3] Satterthwaite David, Sept.2001, “Rural and Urban Poverty: Understanding The Differences”, Global Poverty – Economic Perspectives – State Department. htm, P.1

[4] www.worldbank.org/urban/poverty, for detailed reference see Moser, Caroline, 1998, The Asset Vulnerability Framework: Reassessing Urban Poverty Reduction Strategies. World Development, Vol. 26, No. 1 pp. 1–19.

## Cumulative Impacts of Urban Poverty[5]




the urban context, poverty and vulnerability is not one and the same, but poverty-vulnerability is a dynamic concept, whereby the "vulnerable" face the risk of falling into poverty. Vulnerability is linked to asset ownership, those are less vulnerable who have more assets. The types of assets fall under the headings of labour, human capital-health, education, skills, productive assets; the most important is housing, household relations and social capital. The dynamic framework also provides analytical tools for assessing income poverty, health and education poverty, personal and tenure insecurity and disempowerment.

The cumulative impacts framework is characterised by cumulative deprivations: one dimension of poverty is often the cause of or contributor to another dimension, as illustrated in the following table (urban poverty matrix) and diagram (cumulative deprivations).

### Table 1: Urban Poverty Matrix

| Dimension of poverty | Visible causes or contributing factors | Policy-related causes | Impacts on other dimensions of poverty |
|---|---|---|---|
| Income | • Dependence on cash for purchases of essential goods and services<br>• Employment insecurity/casual work<br>• Unskilled wage labour/lack of qualifications to get well-paid jobs<br>• Inability to hold a job due to bad health<br>• Lack of access to job opportunities (urban poor often have to trade off between distances to jobs and costs of housing) | • Macroeconomic crises reduce real incomes<br>• Failure of public services such as education, health, infrastructure, transport to serve the urban poor<br>• Regulatory constraints on small enterprises perpetuate "informality" of work available to the poor, discourage asset accumulation and access to credits, and increase vulnerability of workers | • Inability to afford housing and land, thus, underdeveloped physical capital assets<br>• Inability to afford adequate quality and quantity of essential public services, e.g., water, thus unhygienic living conditions and depreciated health<br>• Poor human capital–bad health and educational outcomes due to stress, food insecurity, and inability to afford education and health services<br>• Depreciated social capital resulting in domestic violence and crime |

[5] ibid

| Dimension of poverty | Visible causes or contributing factors | Policy-related causes | Impacts on other dimensions of poverty |
|---|---|---|---|
| Health | • Overcrowded and unhygienic living conditions<br>• Residential environments are prone to industrial and traffic pollution due to juxtaposition of residential and industrial functions in cities<br>• The poor in cities settle on marginal lands, which are prone to environmental hazards, such as landslides and floods<br>• Exposure to diseases due to poor quality air, water, and lack of sanitation<br>• Injury and deaths rising from traffic<br>• Industrial occupational risks- - unsafe working conditions, especially for those in informal sector jobs | • Land and housing regulations can make proper housing unaffordable and result in living in disaster-prone and polluted areas<br>• Bad policy frameworks and failure of public services such as environmental and health-related services (water and sewerage, solid waste disposal, drainage, vector control) to keep pace with population growth<br>• Lack of labor protection (worker safety)<br>• Poor traffic management and pedestrian facilities<br>• Lack of safety nets and social support systems for families and youth | • Inability to hold a job<br>• Inability to earn sufficient income<br>• Reduced ability of children to learn due to illness (e.g., lead poisoning)<br>• Risk of injury and associated income shocks<br>• Poor education outcomes |
| Education | • Constrained access to education due toinsufficient school sizes in rapidly growing cities<br>• Inability to afford school expenses<br>• Personal safety/security risks deterring school attendance | • Incapacity of public authorities to provide for adequate classroom and school sizes<br>• Lack of safety nets to ensure ability to stay in school despite family economic hardships<br>• Insecure and unaffordable public transport | • Inability to get a job<br>• Lack of constructive activity for school age youth, contributing to delinquency<br>• Continued gender inequities |
| Security | Tenure insecurity<br>Land and housing in authorised areas are not affordable; therefore, the poor typically build or rent on public or private property. Houses lack proper construction and tend to be in unsafe areas prone to natural hazards. | • Land policies do not make sufficient developed land available for the poor<br>• Land policies do not permit regularisation of tenure in most unauthorised settlements<br>• Inappropriate standards and codes make housing unaffordable<br>• Regulations impose costly and cumbersome procedures to get registered or to obtain occupancy permits<br>• Lack of access to credit | • Evictions that cause loss of physical capital, damage social and informal networks for jobs and safety nets, and reduce sense of security<br>• Inability to use one's home as a source of income--such as renting a room; creating extra space for income generating activities, etc |
| | Personal insecurity<br>• Drug/alcohol abuse and domestic violence<br>• Family breakdown and reduced support for children<br>• Social diversity and visible income inequality in cities, which increases tensions and can provide a temptation for crime. | • Lack of employment opportunities, services, and assets (both communal and personal) stigmatise certain areas within cities as centres of crime and desolation<br>• Lack of safety net policies and programmes | • Diminished physical and mental health and low earnings<br>• Damage/loss to property and increased costs for protection and health care<br>• Depreciated social capital such as loss of family cohesion and social isolation |
| Empowerment | • Illegitimacy of residence and work<br>• Isolation of communities that are disconnected from jobs and services<br>• Insufficient channels of information for obtaining jobs, knowing one's legal rights to services, etc<br>• Not having the rights and responsibilities of citizens | • Regulatory and policy frameworks (for service provision, housing and land, and income-generating activities) make the settlements and/or occupations of the poor "informal" or "illegal"; this denies them the same rights as other urban citizens<br>• Oppressive bureaucracy and corruption<br>• Official or unofficial discrimination | • Lack of access to urban services<br>• Sense of isolation and powerlessness<br>• Violence<br>• Inefficient use of personal time and money to seek alternative forms of redress, e.g., payment of bribes |

Poverty when seen through a rights-vulnerability lens is both multi-dimensional and dynamic. It can be the outcome of a range of economic, social, physical and psychological factors that deny individual, households and communities choice of freedom and rights. Under this definition, people's vulnerability builds up from an individual's lack of control over and dependence on the city's economic, social, political forces and is easily exacerbated by their gender, age, ethnic and caste identity. Sudden environmental, economic, social and political shocks that effect people's ownership or control over critical assets are known to seriously impinge on people's rights. The degree of poverty and vulnerabilities also differ and undergo change over the years across generations due to increasing capabilities. An ADB study[6] developed a framework based on the dynamic nature of needs for survival, security and a better quality of life through empowerment and legal entitlements. The poor in this framework were categorised as core, intermediate and transitional poor, and in another study as declining poor, coping poor and improving poor, against indicators of survival (right to shelter, livelihoods, food security and health), security (right to environment – water, sanitation, electricity, education), equity and development (transport, credit) and empowerment (right to information, participation and equal opportunities).

In India and other developing countries urban poverty has largely been a result of increasing exclusionary growth of cities by making land, services and security more and more scarce for the urban poor. Ironically, the exclusion of urban poor is in-built in policies, legislation, judicial orders and administrative practices, which are being tuned to further accommodate the interests of the market and middle class. This study in following chapters examines such exclusionary growth of the capital city Delhi.

## 1.2 Cities and its Poor in Statistics: Trends and Issues

The world took 1800 years to reach its first billion population; it took 130 years to reach the second billion, while it took just 60 years to cross the five billion mark. At the onset of the present millennium, for the first time in human history, more than 50 per cent of the world's population was living in urban areas. It is estimated that by 2030, approximately seventy five per cent of the worlds' population would be urban. Over the last few decades, cities have witnessed phenomenal expansion in the wake of the new economic paradigm of globalisation. According to the United Nations, cities in developing countries are growing by over one mn people a week. The World Bank estimates that worldwide 30 per cent of poor people live in urban areas. The Bank also estimates that there were 495 mn urban poor by the year 2000 based on its 'one dollar-a-day' poverty line.[7]

### 1.2.1 Lower Rate and Declining Trend of Urban Growth and Migration: Demystifying Causal Link between Global Market and Urban Growth

While the country's population increased by 21.34 per cent in 1999–2001, the urban population grew by 32.36 per cent in the same period. This moderate urban growth is explained by the declining rate of urban growth in the last two decades. As per the Census 2001, of the 1.02 bn population of India, 285 mn or 27.8 per cent live in urban areas, which comprise 5,161 towns and cities, including approximately 40 mn plus and 300 medium size towns of more than 100,000 population. It has been observed that the degree of urbanisation in India is among the lowest in the world, while the actual number of urban population (285 mn) in India is next only to China. United Nations estimates for 2000 show that 47 per cent of the total population of the world lives in urban areas. While the proportion of urban population in developed countries range between 75 and 80 per cent, it is 36.7 per cent in Asia. Within Asia, countries like China and Indonesia, starting from lower levels of urbanisation in 1950, have now overtaken India with urbanisation of 32.1 per cent and 40.9 per cent, respectively. This is partly because the decadal growth of urban population in India has been declining, from 46.1 per cent in 1971–81 to 31.2 per cent in 1991–2001. Correspondingly, the average annual exponential growth in urban areas/towns has also dropped from 3.8 per cent to 2.7 per cent respectively.[8]

[6] Reducing Urban Poverty in India, ADB, June, 2001 (from Technical Assistance Report, NIUA)

[7] Satterthwaite David, Sept. 2001 Rural and Urban Poverty: Understanding The Differences, Global Poverty – Economic Perspectives, p.1

[8] The Tenth Five-Year Plan Document, 2001, p.612

The Census 1991 noted a significant decline in population growth in urban areas. Declining annual growth rate (exponential) of urban population in India from 3.1 per cent during 1981–91 to 2.7 per cent during 1991– 2001, reinforces the declining trend of urbanisation in the country since the rate had deccelerated even during 1980s compared to the all time high growth of 3.8 per cent during 1971–81.[9] This trend, apart from reinforcing declining trend of urbanisation in India since 1981 completely goes against neo-liberals theories and speculation of 'urban explosion' due to free market economy. Based on these popular theories speculations about higher growth of urban population by UN (World Urbanisation Prospects, 1995) and India's Planning Commission (Eighth and Ninth) also went wrong.[10] The analysis of development dynamics in 1990s also shows all round decline in growth of employment and salaried workers, negative growth of the work force in public units, extremely uneven growth and incidence of urban poverty across states, concentrations of demographic growth in developed states,[11] along with declining trend of urbanisation.

### 1.2.2 Overall Higher Growth of Urban Population and Significant Regional Variation

Notwithstanding the growth rate, the overall growth of urban population in terms of absolute number in India since independence has been phenomenal. The first post independence Census of 1950 recorded 62.44 mn urban population in 2,795 urban settlements; the Census of 1991 placed the urban population at 217.17 mn, registering an increase of 247 per cent over a period of 40 years. As per Census 2001, of the total population of 1.02 bn, 27.8 per cent (285 mn) live in urban areas. There is however, a wide regional variation in urban growth and thus distribution of urban population. About one-third of the urban population is concentrated in six developed states, out of the total 27 states and six Union Territories (UTs). These states include Maharashtra, Gujarat, Tamil Nadu, Karnataka, Punjab and West Bengal. The variation across the states is significant as the National Capital Territory of Delhi is at one end of the continuum with 93 per cent, Maharashtra and Tamil Nadu with 42 per cent and 43 per cent, respectively, while Himachal Pradesh has only 9.8 per cent of its population in cities and towns.

There is however, no correlation between the urban growth and economic development in these states, as 'the pattern of *urban growth* across states is significantly different from that of the *levels of urbanisation*.'[12] Prof Kundu points out that since independence till 1991, developed states such as Tamil Nadu, Punjab and Karnataka, having a high percentage of urbanisation, had shown medium or low growth of urban population.[13] In contrast, high urban growth was registered in relatively backward (BIMARU) states like Bihar, Madhya Pradesh, Orissa, Rajasthan and U.P. This shows negative relation between urban growth and economic development, although developed states like Haryana and Maharashtra having higher urban growth than that of country are exceptions.

### 1.2.3 Decreasing Urban Poverty

The percentage of population below poverty line in the country has decreased from 54.88 per cent in 1973–74 to 26.10 per cent in 1999–2000. Compared to the national average, in Delhi the proportion of population below poverty line has decreased from 49.61 per cent in 1973–74 to 8.23 per cent in 1999–2000. The head count ratio of urban population below poverty line has declined from 49 per cent in 1973–74 to 32 per cent in 1994, there exist wide inter-state disparities and poor access to basic urban services.

[9] Census 2001

[10] Kundu, A, July 19,2003, "Urbanisation and Urban Governance: Search for a Perspective beyond Neo-Liberalism" Economic and Political Weekly, p.3083

[11] ibid

[12] ibid

[13] ibid

### Table 2: Rural and Urban Population (in million) Below Poverty Line[14]

| Years | Rural | | Urban | |
|---|---|---|---|---|
| | No. of persons | % pop. | No. of persons | % pop. |
| 1973–74 | 261.3 | 56.4 | 60.0 | 49 |
| 1977–78 | 264.2 | 53.1 | 64.6 | 45.2 |
| 1983 | 252.0 | 45.7 | 70.9 | 40.8 |
| 1987–88 | 231.9 | 39.1 | 75.2 | 36.2 |
| 1993–94 | 244.0 | 37.3 | 76.3 | 32.4 |

Rural poverty was higher than urban poverty by at least five percentage points in the 1970s and 1980s. The 55th and 56th round National Sample Survey (NSS) data revealed that this gap had reduced. The percentage of persons below poverty line in urban areas had been steadily declining since 1971, when it was first estimated to be 49 per cent, but the absolute number of urban poor had been rising, reaching 76.3 mn in 1973–74. Census 1991 for the first time noted a fall in proportion of urban poor as well as in their absolute number. According to the large sample survey by 55th round of the NSSO, using 30 days recall period, 23.62 per cent of India's urban population was below the poverty line in 1999–2000.[15] Some may ask if the lower rate of migration, lower employment growth and decline in the growth of urbanisation, contributed to the fall in proportion and absolute number of urban poor. There is, however, a wide regional variation and differences that are noted among different size class cities in economically developed and backward states with regard to the extent and nature of urban poverty. All four states in southern and three states in western India (Goa, Gujarat, Maharashtra Haryana) and Delhi, Madhya Pradesh and Pondicherry report higher levels of urban poverty than rural poverty. Arunachal Pradesh and all four states of eastern India – Bihar, U.P, Orissa and Bengal report higher incidence of rural poverty than urban poverty. The inter-state variation in poverty did not show much co-relation with per capita income and with other development indicators in urban areas in 1990s.[16] Employment data shows that it is higher in urban areas than in rural areas. The current population of urban poor in India is estimated to be nearly 80 mn, while the slum population is only 40 mn. It is estimated that nearly 40 per cent of India's urban population is poor. India's mega-cities have the highest percentage of slum-dwellers in the country.

Provisional data on slums in the 2001 Census reported 40.6 mn persons in slums in 607 cities and towns and they together account for 22.8 per cent of the urban poor. The Census data, however, reflect inherent problem of uniformity in defining slum, poor record on slums and lack of information on towns with less than 50,000 population and slum clusters with less than 300 population.

## 1.3 Water and Sanitation Coverage: Fuzzy Statistics

In the report titled "Listening", the Water Supply and Sanitation Collaborative Council – a Geneva-based United Nations body – stresses that one out of every six people in the world – or about 1.1 bn – do not have safe water to drink. About 2.4 bn people in the world do not have adequate access to sanitation. According to UNICEF, WHO, Planning Commission figures India is almost on course to meet the Millennium Development Goal (MDG) Target for water and sanitation[17] in urban areas by 2015. According to a World Bank report out of 27 metropolitan cities with million-plus population in Asia, Chennai and Delhi share the same rank as the worst performing cites in terms of hour of water available per day. Mumbai ranks third and Kolkata find fourth position. (Tenth Planning Commission, chapter 6.2, p.637) While the Ninth Plan mid-term review puts in on record that there are no systemic and regular systems of monitoring and generating data for the status of urban water and sanitation from the state level upwards to the central government agencies. Between 1990–2000, India

[14] The Tenth Plan Document, 2001,6.1.3, p.625

[15] The Tenth Plan Document, 2001,6.1.69, p.611

[16] Mohanty, B. (ed.), 1993, "Urbanisation in Developing Countries, Institute of Social Sciences", New Delhi, pp. 363–64

[17] WaterAid India, 2004, A Study on coverage and issues in water and sanitation sector, p.12

reached eight mn extra people per year with water and 7.7 mn extra people per year with sanitation.[18] The coverage of drinking water in urban areas was reported to be 91 per cent in the 55th round of the National Sample Survey in 1998–99. However, only 59 per cent of the urban population received drinking water from a public source, which they did not have sole access over.[19] According to the 54th round of NSS, 62 per cent of urban household reported having their principal source of water within the premises and 32 per cent had it within 500 metres.

The percentage of households having no latrine has declined significantly from 36.8 to 31.1 during the period from 1983 to 1988–89. The figure has, however, gone down only marginally to 30.6 per cent in 1993. The declining trend of urbanisation and urban poverty, thereby, has no reflection on the serious deficiencies of housing stock, urban infrastructure and basic urban services, especially in low-income settlements. This is largely due to growing urban population, low public investment on urban services and poor implementation of development schemes. The large cities/urban agglomerations like Mumbai, Delhi and Kolkata are exploding with a population over 10 mn people. Several researches show that in these mega cities as high as 50 to 60 per cent of the city's population lives in informal or sub-standard settlements having little or no access to land tenure and basic services, including water and sanitation.

Report of the National Commission on Urbanisation, GoI, 1988, (Report, vol. II, Government of India, New Delhi) noted that if the water supply system is unequal and unjust, being highly biased in favour of the rich, the sewerage system is even more unjust. About one-third of the total urban population is not served by any drainage system and in 12 urban centres, 50 per cent or even more waste is not collected. In some small towns, even a rudimentary hygienic waste disposal system does not exist. The acute gap in provision and poor quality of basic services and amenities in these settlements result in poor environmental sanitation conditions that have the potential of resulting in an urban disaster.

Disparities in the level of urban basic amenities in different states and size class of cities and towns were extremely high in the nineties.[20] Iniquitous provision of basic services in backward states, small and medium towns for the poor clearly reveals the bias of the government and para-statal institutions in favour of bigger cities and middle and upper classes of formal/built cities. Cut back in social sector and resource crunch has over the years led the government find answer in privatisation, partnership arrangements and community-based projects for undertaking investment in basic amenities. Decline in public investment, resource mobilisation from the market for sustaining weak municipalities, incentives to private investment in building and operating urban services, and higher tax for private services together underline the changing perspective of the State and its policy framework for future urban development. Its impact in recent decades has shown a trend towards increasing disparity in the levels of amenities across the states and size class of urban settlements.

### 1.3.1 Population Density and Land Tenure: Role of Global Capital and Issue of Urban Poverty

The urban land distribution demonstrates other extremes of middle class bias; the urban poor who account for 50 to 60 per cent of the population of metropolises occupy a very small portion of the total land in the city. Lack of supply of adequate housing stock, which is a national commitment towards ensuring right to shelter, force people to live in unauthorised colonies and squatters. Urban planning further excludes the urban poor from the city's built landscape. The low-cost housing schemes are not even worth a mention in any city, despite a large number and proportion of the urban population needing shelter that can be available at a low-cost.

The extreme densities in these settlements compound many vulnerability factors to create a perpetual hazardous situation. For example, 60 per cent of Kolkata's population of 6.4 mn

[18] ibid

[19] Tenth Five-Year Plan,2001, P.626

[20] Kundu, A, July 19,2003, "Urbanisation and Urban Governance: Search for a Perspective beyond Neo-Liberalism" Economic and Political Weekly, p.3083

live in squatter settlement where the density peaks at 32,000 people per sq. km, one of the highest urban concentrations in the world. The population density in some older parts of the cities has reached a level of about 2,500 persons per hectare. This is so despite the fact that nearly ten hectares of fertile land is encroached by urbanisation every day. On the other hand privatisation of land and civic services is pushing up the living costs, particularly in large cities. That would invariably slow down the migration, in the costly core of the city areas. "In-migration of poor in large cities would have been even less in the 1990s as access to basic services has become increasingly difficult for them, due to reduction in public expenditure (particularly capital expenditure) on urban development and social sectors.[21]

Privatisation of land and civic services is constantly increasing the cost of living, particularly in large cities. This is a deterrent for migration into the costly core of the city. Further, as the price of land in the city's central areas escalate; more and more informal settlements located on such prime land are being shifted to the city's periphery in the name of 'urban development'. Attempts are underway to provide land and services to 'select commercial centres' at preferred sites for upcoming business opportunities. "This is being done by simplifying the legal and administrative procedure for changing land use and by pushing out 'low valued' activities from this site."[22] Thus, the squatters of hawker, vendors, and informal activities are being shifted to the city's periphery. In recent times such relocations have been observed in all metropolises, irrespective of political ideology of the ruling party, with full support of judiciary, administration, middle class, press and in a some cases, even 'environmentalist' NGOs. Many public interest litigations filed by resident welfare associations and environmentalist NGOs to relocate slums found favourable court orders as well as media coverage. Prime areas of cities are being cleaned and developed for better business opportunities and land use pattern and administrative norms are tuned to the needs of business houses and government's decisions to beautify the city and build golf courses, sports complexes and other such infrastructure for urban development. The case study of Delhi highlights these issues in the next chapter.

Under government schemes, the relocated families are allotted land on subsidised rates but there are no provisions for their livelihood. Many original allottees do not hold on to the new sites for very long and shift back closer to their work sites after selling the property. Most cities' local governments do not have resources including land, services and finances for relocating even one-tenth of the city's informal settlements.

For a city's development, both the city's poor and pollution (polluted industries, landfill sites, non-municipal dumping areas) are taken out of the city to rural periphery, where investments are low and services are poor. Fate of the city surrounded with such periphery is well predicted, but planners and policy makers continue to build and rebuild what Prof Kundu calls 'degenerated peripheries',[23] where the new generation of urban poor live hand-in-hands with city's pollution and minimum or no basic services.

## 1.4 National Policies and Programmes for Planned Urban Infrastructure and Urban Poverty Alleviation

*"Urbanisation by itself is no cause for alarm. What is alarming are the gross inefficiencies and inequities that characterise urbanisation in the developing world."*[24]

Globally experiences reveal that successful implementation of policies, legislations and plans pertaining to urban poverty reduction are subject to their integration with other policies and goals of social and economic development. The enabling policies along with efficient, transparent and accountable institutional mechanisms are prerequisites for any comprehensive approach for inclusive governance.[25]

[21] Kundu, A et al, 1999, "Regional Distribution of Infrastructure and Basic Amenities in Urban India", EPW 34 (28)

[22] Kundu, A, July 19th, 2003, "Urbanisation and Urban Governance: Search for a Perspective beyond Neo-Liberalism" EPW, p. 3085

[23] Kundu, A., Schenk, H., and Dash, B. P., 2002. Changing role of state in urban governance, provision of basic amenities to poor in the context of unplanned growth in metropolitan peripheries of Delhi and Hanoi. New Delhi: Institute for Human Development

[24] George Frier

[25] Mattingly, Shirley – Policy, Legal And Institutional Arrangements, Regional Workshop on Best Practices in Disaster Mitigation, p.22

In this context, it is important to enquire the roles, approach and strategies of policies, legislation and institutions of Indian state that have largely been responsible for the current state of urban affairs. It is important to identify gaps in key components of urban governance and its changing character and directions over the years. This alone will possibly help us understand underlying or structural causes for increasing disparity in basic urban services and peripherilisation urban poverty. It is a complex scenario, where it is not easy, nor a scope of this study, to find causal link or co-relation between declining urban poverty in Census, increasing disparity in urban basic services and land security, peripherilasation of urban poor, decelerating rate of urbanisation or urban growth, increasing unemployment and casualisation of work force in urban areas. This section gives an overview of the evolution of policies, legislation and institutions impacting urban poverty and urban development over the years and to understand how the Indian State addressed the issue of urbanisation and urban poverty.

### 1.4.1 Policies, Legislation and Urban Poverty Alleviation Programmes

In recent years the policies impacting urban development and housing in India have largely been shaped in response to increasing urban population and urban slums, apart from external influences such as Habitat I in 1976, Habitat II in 1995 and the Yokohama Summit on Disaster Mitigation in 1985. Policies and legislations impacting urban development have come a long way since the 1950s, when urban population was merely 15 per cent. The pressure of urban population and lack of housing and basic services were very evident in the early 1950s. In some cities, especially Delhi this was compounded by migration of people from Pakistan. However, the general thrust in national plans for very long was on rural development. The widespread perception was that urbanisation leads to the drain of resources from the countryside to feed the cities. Multi-purpose dams for irrigation and electricity and industrial growth for production and employment dominated the development thrust. In contrast to the rural bias of national plans in 1950s and 1960s, the Seventh and Eighth Five-Year Plans in eighties and nineties recognised the city as an engine of economic growth, as cities and towns together contribute 65 per cent to the GDP.

Significant shift in the strategies and approaches to address the issue of urban poverty is apparent in plans and policies. Government policies and programmes addressing urban poverty have moved from an emphasis on mechanisms to address social and economic inequities in the First Plan and distortions in income distribution in the Fourth Plan, to a focus on access to productive employment, shelter and services in the Eighth and Ninth Plans. The Ninth and, more recently Tenth Plan document emphasised the need for good urban governance having features of decentralised, transparent, responsive and accountable local urban governance.

A sizeable part of the First Five-Year Plan (1951–56) outlay was spent on rehabilitating the migrants/refugees from Pakistan and on building the new settlements in Delhi and Chandigarh. The *Second Plan* (1956–61) expanded the scope of housing programme for the poor. The Industrial Housing Scheme was widened to cover all workers. Three new schemes were introduced, namely, Rural Housing, Slum Clearance and Sweepers Housing. The government stopped granting direct loans for housing, instead it began to give assistance to the state governments and local authorities and a separate department was set up under the Ministry of Work, Housing and Supply to implement housing schemes.

To contain the growing urban population as well as for the planned city many acts were brought during these plan years to strengthen State's control over urban land through requisition and acquisition of urban lands. The Requisitioning and Acquisition of Immovable Property Act, 1952 gave authority to any Competent Authority of the Union to take over any land or property for any public purpose by calling the owner of property and giving a fifteen days show-cause notice. While it was enough to remove the informal settlements, another central Slum (Clearance and Improvement) Act, 1955 was formulated to decongest the city for planned development.

Along with it, the subsequent Fourth and Fifth Five-Year Plans introduced integrated development of smaller towns. Decongesting cities and creating or developing small towns

became the focal direction of national plans and policies under Third, Fourth and Fifth Five-Year Plans in the sixties and seventies. This was to be achieved by planning the spatial location of economic activity. After testing the Master Plan approach in bigger cities like Delhi, Calcutta and Mumbai, Master Plans for state capitals of Gandhi Nagar and Bhubaneswar were developed. Instead of focusing on providing shelter for increasing population of migrant workers in informal settlements, they were either evicted and given alternative site far from their workplace for relocation or provided basic environmental services at sites. As if other two acts of land acquisition and clearance were not adequate, two new acts –The Public Premises (Eviction of Unauthorised Occupants) Act, 1971 the Urban Land (Ceiling & Regulation) Act, 1972 were enacted to prevent concentration of land holding in urban areas and to make available urban land for construction of houses for the middle and low-income groups. Of course, low-income group had a lower priority under this scheme, as it was mainly meant for relocation of slums and squatters.

The Fifth Plan identified environmental improvements in urban slums as a basic need of the slum population. This resulted in the Environmental Improvement of Urban Slums (EIUS) scheme, which began in 1974, and focused on notified slums. The growing constituencies of urban poor and their employment needs were most explicitly recognised in the Seventh Five-Year Plan, acknowledging the issues of urbanisation and its serious implications. The Ministry of Work and Housing, set up in 1950, was converted into Ministry of Urban Development under the Seventh Plan (1985–90). This plan stressed the need to entrust major responsibility of housing construction to the private sector. A three-fold role was assigned to the public sector, namely, mobilisation of resources for housing, provision of subsidised housing for the poor and acquisition and development of land. A network of Building Centres to develop low-cost housing for urban poor was also set up during this Plan period.

In 1988, the National Commission for Urbanisation recommended that urban poverty should be accorded the same priority as rural poverty, and recommended that community development should be the key strategy to improve the living conditions of the urban poor. This report prompted the Eighth Plan (1992–97) for the first time to explicitly recognise the role and importance of the urban sector in the national economy. The most significant feature of this Plan is formulation of Constitution (Seventy-Fourth Amendment) Act 1993, which represent urban vision of India. This notable legislation by which the Constitution of India was amended to incorporate a separate chapter on urban local bodies, seeks to redefine their role, power, function and finances. The Twelfth Schedule of the Constitution has listed a range of functions of the urban local bodies including – urban planning including town planning; regulation of land-use and construction of buildings; planning for economic and social development; infrastructure development; slum improvement and upgradation and urban poverty alleviation. For decentralised functioning the urban local bodies can perform the functions assigned to them, the Legislature of a State assigned them specific taxes, duties, tolls and levies and authorise them to impose, collect and appropriate the same.

For the first time the Eighth Plan explicitly recognised the problems of the urban poor and an Urban Poverty Alleviation Scheme known as Urban Basic Services for the Poor (UBSP) was launched. A new Department for Urban Employment and Poverty Alleviation was set-up within the Ministry of Urban Development. Apart from basic services unemployment was recognised as an issue for urban poverty alleviation. The government launched special urban employment generation schemes, the Jawahar Rojgar Yojana and later the Swarna Jayanti Shahari Rozgar Yojana for promoting self-employment through SHGs, savings, vocational training, credit and micro-enterprise. This Plan also recognised the needs of fast growing mega cities in the wake of globalisation. The central government launched the Mega Cities Scheme covering five big cities each with a population of 4 mn and above, with central assistance of Rs 5767.7 mn. To address the issues of drinking water in smaller towns with less than 20,000 population the central government under this plan launched Accelerated Urban Water Supply Programme (AUWSP), besides continuing with IDSMT. Till the end of Ninth Plan under AUWSP (1993–2002), 654 central schemes worth 5316.2 mn were sanctioned and with matching funds from the state governments.

In response to the increasing urban poverty, the National Slum Development Programme (NSDP) was launched in 1996, with Additional Central Assistance (ACA) to the States/UTs,

for upgradation of urban slums by providing physical amenities like water supply, storm water drains, community bath and latrines, widening and paving of existing lanes, sewers and street lights. The funds under NSDP can also be used for provision of community infrastructure and social amenities like pre-school education, non-formal education, adult education, maternal and child health and primary health care including immunisation, etc. The programme also has a component of shelter upgradation or construction of new houses. During the years 1996–97 to 2001–02, a total amount of Rs 18073.3 mn was released to the States and UTs under this programme. Eighth Plan also launched the Nehru Rojgar Yojana (NRY) under Urban Poverty and Alleviation Programme for income generation.

Further during the Ninth Five-Year Plan all the three Urban Poverty Alleviation Schemes, namely Urban Basic Services for the Poor (UBSP), Nehru Rojgar Yojana (NRY) and Prime Minister's Integrated Urban Poverty Eradication programme (PMI UPEP) stand subsumed in a new scheme namely the Swarna Jayanti Shahari Rojgar Yojana (SJSRY) with effect from 1.12.97. The SJSRY is funded on a 75:25 ratio between the centre and the states. By the end of Ninth Plan, the central government launched the Valmiki Ambedkar Malin Basti Awas Yojana to seek a balance between shelter, employment and environmental services for the urban poor. The Tenth Plan, in addition to the above emphasis, focuses on urban governance and right to information.

As a follow-up of the Global Shelter Strategy (GSS) formulated during Habitat II at Istanbul, the National Housing Policy (NHP) was announced in 1988. The long-term goal of the NHP was to eradicate the problem of shelter, improve the housing conditions of the inadequately housed and provide a minimum level of basic services and amenities to all. The role of Government was conceived as a provider for the poorest and vulnerable sections and as a facilitator for other income groups through increased supply of land and services. The National Habitat Policy lacked an urban focus, as it emphasised mainly the provision of shelter to rural and urban poor. It did not touch upon the issues of land tenure security, on-site slum upgradation and provision of adequate services for urban poor.

### 1.4.2 Urban Land Policies: Major Source of Urban Problem

Apart from planned urban infrastructure and urban poverty alleviation, every plan document expresses continuing concern over the unwarranted rise in the urban land prices and regards control of urban land values as a major objective in urban policy and planning. As a result, a series of legislations were formulated for regulating urban land. The thrust of the urban land policy has ignored the objective of efficiency in allocation but has concentrated exclusively on land price control through different degrees of socialisation. This has usually been justified in the interest of the poor, so that they too are able to access urban land. However, the implementation of the urban land policy has benefitted middlemen, giving rise to large scale corruption.

The fundamental problem of the land policy has been the lack of equitable supply of serviced land in adequate quantities, at the right locations, at the right time and at the right price (Rakesh Mohan, 1982). The stated objectives of the land policies are as follows:

- Achieve optimal social use of urban land
- Making land available in adequate quantity to both individuals and institutions at the right time and at the right price.
- Encourage community cooperative efforts and bonafide developers
- Development, housing and construction
- Encourage socially and economically efficient allocation of urban land for resource conservation and optimum land use
- Safeguard the interests of the weaker sections of society by widening the base of land ownership
- Provide flexibility of land use in response to the changes resulting from a growing city

Urban land policy in India has persistently been equated with urban land use policy rather than with a holistic land management framework for integrated development. Availability of

land has been constrained by certain provisions contained in a variety of laws such as the Land Revenue Act, the Land Reforms Act, the Urban Land Ceiling and Regulation Act (ULCRA), the Town Planning Act and the Urban Development Acts. Each of these has, often through its provisions and equally through the manner in which they were implemented, created hurdles for legitimate transactions in land urgently required for expansion of the housing stock.[26]

As a result of public acquisition of land at very low prices, the intensity of land utilisation is very wasteful and inefficient. This relates to the administrative structure of the city authorities and practices of allotting land for public institutions and perception of few planners that what is good for public. The lands for public institutions like colleges, universities and government premises are given in a wasteful manner, while urban poor do not figure in their scheme.

National and state planning commissions deal largely with financial planning and resource management, and are divorced from land use planning. Land use planners are not involved in the process of formulating development strategies and macro-level regional plans for sustainable human settlement design. Development strategies that are based on natural resource planning are often relegated to the background, and instead political considerations dictate regional plans. This results in the misuse of land, inequitable growth and extensive degradation.

Presently, there is widespread inequity with regard to access to land in most Asian countries. Equitable distribution of land should be an integral part of the devolution of power. Access to land by itself is not adequate unless micro-credit and other support services to generate produce from the land are provided.[27]

Many policy successes in East Asia resulted from initial institutional reforms. But the most important institutional factors in explaining East Asia's high and equitable growth are probably land and credit reforms. The absence of such policy emphasis and effective institutional mechanisms for translating what the current policy intends leaves many gaps between intention, interpretations and implementations.

### 1.4.3 Draft National Slum Policy

For all practical purposes the Draft National Slum Policy does not have any validity for the current functioning of the ministry. In the case of Delhi all measures of relocations are just contrary to its recommendations and the underlying principle of this draft document, as are the most court orders for slum demolition and relocations, instead of slum up gradations.

In 1999, Ministry of Urban Development, with support from DFID, gave the task of formulating National Slum Policy to the Human Settlement Management Institute (HSMI), a resource unit of Housing and Urban Development Corporation (HUDCO), through a wide-ranging consultation process. The main stated objectives of the Draft National Slum Policy are:

a) creating awareness amongst the public and in government of the underlying principles that guide the process of slum development and improvement and the options that are available for bringing about the integration of these settlements and the communities residing within them into the urban area as a whole
b) strengthen the legal and policy framework to facilitate the process of slum development and improvement on a sustainable basis
c) establish a framework for involving all stakeholders for the efficient and smooth implementation of the Policy objectives

Although, it was circulated in 1999 as a draft for comments and suggestions, but for reasons known best to the Ministry, it has not been tabled in Parliament for its adoption through a bill. Thereby there is no stated policy for urban slum dwellers.

[26] Ribeiro, EFN, 2000 “Integrating Risk Reduction Into Urban Planning with Community Participation” Urban Risk Forum, p.7

[27] Anangpur Building Centre website (anangpur.com)

### 1.4.4 Institutions for Urban Development: The missing link between Urban Development and Urban Poverty Alleviation

In the federal structure of Indian polity, the subjects of housing and urban development have been assigned to state governments. The constitutional and legal authority of the Government of India is limited only to Delhi and other Union Territories and subject to State Legislatures authorising the Union Parliament to legislate. As noted, the Constitutional (74th Amendment) Act has delegated many of such functions of urban management to the urban local bodies.

Notwithstanding the Constitutional provisions, the Government of India, through the Ministry of Urban Development, plays a more important role and exercises a larger influence to shape the urban policies and programmes of the country as a whole. The Ministry of Urban Development also coordinates the activities of various central ministries, state governments and other nodal authorities. Besides, it also monitors their various programmes pertaining to urban development and housing. Likewise, it also provides finances through national financial institutions and supports various external assistance programmes for housing and urban development across states. To top it all, the Five-Year Plans provide policy framework and programmatic contents to urban development planning in states. It is thus evident that by controlling the purse, the central government exercises a far more dominant influence on the pattern of urbanisation and real estate investment in the country than state governments through various policies and legislations.

Emphasis on institution building started during the First and Second Five-Year Plans (in 1951–56 and 1957–61 respectively). The Ministry of Works and Housing was constituted and National Building Organisation (NBO) and Town and Country Planning Organisation (TCPO) were set up in 1950s. Town and Country Planning Legislations were enacted in many states and necessary organisations were also set up for preparation of Master Plans for important towns. To develop planned towns, decongestion or relocation and development of smaller towns became the new policy direction in the third and fourth Master plan. Following the direction of Fourth Plan (1969–74) the Housing and Urban Development Corporation (HUDCO) was established to fund the remunerative housing and urban development programmes to prevent further growth of population in large cities and need for decongestion or dispersal of population. The Seventh Plan (1985–90) stressed on engaging private sector for housing construction and set up the National Housing Bank to expand the base of housing finance. NBO was reconstituted and a new organisation called Building Material Technology Promotion Council (BMTPC) was set up for promoting commercial production of innovative building materials.

Recognising the economic importance of urbanisation and its huge contribution to GDP, Ministry of Works and Housing was renamed as Ministry of Urban Development in 1985. Urban poverty alleviation only became a serious issue after ten years in 1995, when India became signatory to the Habitat II agenda at Istanbul in 1995 where it participated in the global action plan for sustainable cities having shelter for all. Acknowledging urban poverty as an emerging global issue, a separate Department of Urban Employment & Poverty Alleviation was set up under the Ministry of Urban Development in 1995. The Department of Urban Employment and Poverty Alleviation was separated from the Ministry of Urban Development in 1999, and in 2000 it was again made part of it, then in 2004 it (Department of Poverty Alleviation) was again separated from the Ministry of Urban Development.

It clearly shows State's late realisation of the importance of urbanisation and urban poverty, besides its lingering confusion to look at urban poverty in the framework of urban development. This means that the problem of the city's informal settlements is not seen as the government's failure to ensure right to shelter and services to the poor by integrating them into planned city. Instead programmes and policies for urban development and urban poverty alleviation are conceptualised, formulated and implemented separately.

The 74th constitutional amendment, of course, added a new dimension to urban governance by empowering the urban local body. The constitutional amendment envisaged the key role of ULBs in planning and monitoring urban services and raising resources through tax and non-tax revenue. Under the provision of 74th Amendment, all the States (except Arunachal

Pradesh) have constituted State Finance Commissions and most of the Commissions have submitted their reports to the State Governments, recommending significant devolution of resources to the urban local bodies. The national Eleventh Finance Commission has also recommended funding of Rs 20 bn as grant-in-aid from the central government to the urban local bodies. The Constitution (74th Amendment) Act 1992 has made the urban local bodies into vibrant self-governing institutions.

### Ministry of Urban Development: A Fit or Misfit with Urban Poverty Alleviation*

| | |
|---|---|
| 1952 | Ministry of Works, Housing & Supply; subsequently it was renamed as Ministry of Works & Housing |
| 1985 | Ministry of Urban Development, in recognition of the importance of urban issues. |
| 1995 | Ministry of Urban Affairs & Employment with a separate Department of Urban Employment & Poverty Alleviation |
| 1999 | Ministry of Urban Development, separated from Ministry of Poverty Alleviation |
| 2000 | Ministry of Urban Development and Poverty Alleviation were brought together |
| 2004 | Ministry of Urban Development and Poverty Alleviation were again separated |

(*Based on information available at the website of Ministry of Urban Development)

The second half of eighties and nineties witnessed changes in the organisational structure for managing urban infrastructure and supporting financing system. The Eighth Plan (1992–97) argued for building cost recovery into the municipal finance system. As a result, the Ninth Plan brought substantial reduction in budgetary allocations for infrastructure development. Besides covering the operational costs for various infrastructure services, the metropolitan and other large cities are expected to make capital investments. The Ninth Plan notes that "concerted efforts will be made to enhance the capacity of the municipalities to bridge the gap between their resources and commitments... Privatisation of activities in the social service sector as well as projects with long gestation period should be stimulated through the fiscal route rather than through direct subsidy" (Planning Commission, 1997)

The information on the result of these measures is though limited, there are few success stories and instances of increased capacity of municipalities to undertake planning and development responsibility as well as generating adequate tax and non-tax revenue. A study by the National Institute of Urban Affairs[28] noted that not more than 5 out of 15 major state governments, for which the survey was conducted, have issued the notification regarding transfer of powers and responsibilities for development planning to the local bodies until the end of 1996. Various other studies have point out the lack of required capacities in ULBs to take up the responsibility of planning, especially of launching capital projects, which require considerable expertise in identifying the infrastructural and industrial projects, their environmental implications and appropriate technology. Given their difficult financial situation, it is unlikely that these bodies will be able to strengthen their planning departments by recruiting technical and professional personnel in immediate future.

### 1.4.5 Changing Realities and Continuing Dilemma of Governance: Gaps in Intent of Policy and Reality of Implementation

As a result of complex institutional picture, Indian policies and programmes to combat poverty over the past 40 years have not followed a straight course. If, on the one hand, there is a lack of policy for urban poor and their shelter, on the other hand, there are a plethora of confusing, conflicting and contradictory policies of national and state governments that influence urban governance and urban planning. Many of these policies, in their implications and interpretation, have gone against the urban poor or low-income informal settlements. Some policies that existed before the 74th amendment come into sharp contradiction with the autonomous functioning of the local municipal bodies.

[28] "Compendium of Major Legislation in Conformity with Constitution Seventy-fourth Amendment Act", (1998): Study Series no. 70, NIUA, New Delhi

The Tenth Five-Year Plan observes that urban governance is characterised by fragmentation of responsibility, incomplete devolution of functions and funds to elected bodies and ULBs; unwillingness to progress towards municipal autonomy, outmoded methods of taxation and reluctance to levy charges. State governments keep taking decisions on matters of taxation.[29] On the other hands, weak municipalities, resource scarcity, relative reduction in capital expenditure on infrastructure and social sectors have created serious scarcity and inequity in provisioning basic amenities to urban population, particularly the poor urban. Transferring power to municipalities without developing intuitional capacity to raise resources for planned development or expecting them to raise resources from the market may not be desirable option.

Most schemes for urban poverty alleviation have gone through numerous permutations, been renamed, restructured or combined and managed by a range of different agencies. They have also been targeted at different interest groups, and/or been redefined at the state level where local politicians and bureaucrats have sought to put a local spin on centrally driven programmes, or to develop their own.

The capacity of the state or local government to generate employment directly through anti-poverty programmes have remained limited due to leakage in the self-employment programmes. Banks and other financial institutions have been unwilling to give loans to the poor due to risk of non-recovery. The poor households at the lower end tend to receive less subsidy and credit than the average.[30] Also, the assets created through wage employment programmes have not contributed significantly to the development potential or long-term income generating capacity of the poor.[31] "Features of the design of the public works programme results in the creation of assets with short durability, low productivity and little general development impact... So that, by their very nature these programmes can offer only temporary income support... They can not lift the assisted households above poverty in a sustained manner."[32]

As we noted that although the Ninth and Tenth Plans, brought together all key needs of the urban poor – shelter, employment and basic environmental and other services, what reaches the poor is another matter. One must note that most of these schemes are targeted to only families below poverty line, not all the families living in slums and other informal settlements. According to Census 2001, less than 10 per cent families come under BPL in Delhi, while more than 50 per cent of the population lives in informal and sub-standard settlements in Delhi.

Another fact that often goes unnoticed, as few question, is how much allocations are made to these schemes in how many states, what percentage of allocated money is spent and lastly what actually reaches the poor. A study commissioned by CARE in October 2001, to assess the access to these schemes by the urban poor in Delhi reveals that between 1998–99 and 2000–01, under SJSRY, out of total target of 16,200 persons in Delhi, 8091 persons applied to banks and only 277 persons (3.2%) received the loan. It does not say if all the amounts went to deserving families. Out of the target of 3000 for the training component, only 800 (27%) were trained.

While this study tried ranking the community's preferences for the most needed schemes – 33 per cent community members ranked employment scheme on top, 23.3 per cent preferred environmental improvement and 22.9 per cent wanted information and capacity building related schemes, while 17.8 per cent people preferred schemes for financial assistance and social security and only 4 per cent needed health schemes.

At four settlements (two resettlement colonies, one transit camp and three JJ clusters) under the study, despite the presence of NGOs for a long time (except at one site), out of 280

[29] Tenth Five-Year Plan Document, Chap.6.1, pg 611

[30] Tendulkar, Suresh D., Sundaram, K. and Jain L. R. (1993): Poverty in India, 1970-71 to 1988–89, ILO – ARTEP Working Paper, New Delhi

[31] ibid

[32] ibid

persons surveyed, 6.15 per cent were aware of SJSRY, 1.3 per cent tried availing, and 0.33 per cent succeeded. Although 47 per cent people were found aware of PMRY, but only 11 per cent tried availing and 1 per cent succeeded. Only 1.6 per cent people had heard of UBSP and 57.4 per cent knew about EIUS, only 24 per cent tried availing and 12 per cent succeeded. The study interestingly revealed the foremost reason for inaccessibility to these schemes is the lack of information and awareness, apart from other factors like inability to deal with the bureaucratic process, the middlemen (Pradhans), corruption and a general apathy in any institutional operation.

It is, therefore, recommended that the anti-poverty programmes should primarily be focused on provision of basic amenities.[33] An analytical study by Prof Kundu[34] apprehends that developing the capital market through financial intermediaries, including the credit rating institutions may further have serious implications on the functioning of ULBs. He observes "In most cases the local bodies, issuing bonds for resource mobilisation, have been forced to pledge their regular earnings from octroi, grants from the state etc as a guarantee for debt servicing. This can severely restrict the functioning of the local level authorities and come in the way of fulfilling their normal obligations. Furthermore, the projects that are likely to be financed through such arrangements would have to be commercially viable. The arrangements would thus lead to a situation wherein the finances generated from the common people get escrowed as security for projects that are likely to benefit better off sections of population or elite colonies. The policy of liberating the local bodies from the regulatory and legislative controls of the government may oblige the former to come under the direct control of financial institutions, resulting in a dilution in their social commitments including that of reducing regional imbalances and providing basic amenities to the poor."[35] The Tenth Plan explains poor urban governance, inability of the weak urban local bodies in delivering services and State's control over municipal bodies as key reasons for the worsening urban situation and increasing urban poverty.

ULBs are subordinate entities under the day-to-day control of the state governments beholden to them not only for the development of cities but also for their own survival. ULBs are incapable of meeting their obligations as institution of local self government."[36] It is significant that apart from the traditional municipal functions, Article 243W allocates to ULBs the function of 'preparation of plans for economic development and social injustice', and the tenth schedule contains urban poverty alleviation as municipal responsibilities. It is not clear how ULBs will be able to meet these expectations with the given capacity and current administrative practices.

## 1.5 Reality of International Aids for Urban Poverty Alleviation and Water and Sanitation: The Big May Look Small[37]

The World Bank and the Overseas Economic Cooperation Fund (OECF) have been the largest external assistance for urban projects in India. Till recently (2000) these agencies accounted for a little over 70 per cent of the total on-going external assistance to urban sector projects. The Department of International Development (DFID) and the United States Agency for International Development (USAID) are other agencies with substantial commitments (over USD 200 mn each). Other important donor agencies include Asian Development Bank (ADB) and the KFW/GTZ. A few of these first generation urban assistance programmes, that mainly focused on infrastructure development of cities, looked upon informal settlements, as most of them were designed to assist the central government in improving urban infrastructure. (see appendices of first part of this study). Among all these agencies, to date, the DFID has been one of the main international agencies concerned with urban poverty alleviation in India. It was followed by GTZ-KFW, USAID and JBIC.

[33] A Kundu, 2003 "Urbanisation and Urban Governance: Search for a Perspective beyond Neo-Liberalism Economic and Political Weekly, July 19

[34] ibid

[35] ibid

[36] Tenth Five-Year Plan Document, Chap.6.1, pg 611

[37] Most information of this section have been collected from the website of Union Ministry of Urban Development and cross-checked with the web-sites of mentioned donor agencies.

Since 1998 several leading donor agencies have been reviewing their response to the growing trend of urbanisation of poverty and its varied manifestations. These agencies include the European Commission, DFID, World Bank, UNDP and the United Nations Centre on Human Settlements (UNCHS). These institutional donors are developing new approaches to urban poverty reduction. For some, namely World Bank and UNCHS this has led to formulation of new directions. For others DFID, UNDP and the European Union finalisation of new strategies are currently underway. All these organisations, however, share common shifts in focus, away from exclusive 'hardware' infrastructure and services towards 'software' capacity building and institutional strengthening; and away from sectoral approaches to holistic approach to livelihood promotion. For DFID, livelihoods promotion includes improvement in physical, financial, environmental and social assets of the poor.

Between 1995–2000, over half the external assistance (USD 1,223 mn) for the urban sector was provided for the water supply and sanitation sector for cities. These include assistance for augmentation, rehabilitation and O&M of water supply and sewerage systems; improving water quality; introduction of control and monitoring facilities; recycling water in treatment plants; water conservation measures; and, managerial, technical and financial strengthening of institutions. Other sub-sectors receiving assistance over USD 100 mn are urban environment (USD 202 mn) and housing (USD 136 mn). These sub-sectors account for about 9 per cent and 6 per cent of total external assistance flows in the urban sector, respectively.[38] Of the nine key identified areas of assistance, only Urban Poverty Alleviation (UPA) programmes and select components of the assistance for urban water supply and sanitation and housing projects, are targeted directly at the poor. Most other assistance is towards city-level infrastructure and formulation of enabling policy, strategic and institutional frameworks for the urban sector. These may provide indirect benefits to the poor in the long run.

The assistance from multilateral and bilateral agencies, along with international NGOs (INGOs) extended to urban sector projects was about USD 2,300 mn during 2000. This is only 9–10 per cent of the estimated investment requirements for urban infrastructure over 1996–2001. This assistance is directed towards a variety of projects in different parts of the country. Although the range and scope of these programmes is impressive, GoI's institutional and funding capacities are limited. The overall allocation for these programme in 1997, covering 3700 urban local bodies was just Rs 1.88 bn, around half a mn rupees per town.[39]

## 1.6 Conclusion

Over the centuries, the concept, size, population, needs as well as literary depictions of cities have undergone a remarkable change in most parts of the world. Cities in the developed as well as developing countries are acquiring an economic as well as literary identity of their own.

Cities have been acknowledged as 'engines of growth' and major contributors to national economies. However, in many Asian countries, growth of cities and their economy has led to the growth of informal work force. While the diversified services provided by the informal workforce contribute significantly to the city's economy, this section of the city's population has largely been excluded from the city's development processes. The exclusion of urban poor and their needs, from the policies as well as urban planning often lead to iniquitous distribution of resources between the habitants of formal and informal cities. In recent decades the gaps between them have widened. The macro economic processes of globalisation have further marginalised the urban poor, making them more insecure and vulnerable.

In the wake of the new economic paradigm of globalisation, cities in developing countries have witnessed phenomenal growth due to rampant in-migration. While for last two decades, India has been experiencing a declining trend in the rate of growth of urban population, the fact still remains that growth of urban population in absolute terms is proceeding at a

[38] "Compendium of Major Legislation in Conformity with Constitution Seventy-fourth Amendment Act", (1998): Study Series no. 70, NIUA, New Delhi

[39] "Compendium of Major Legislation in Conformity with Constitution Seventy-fourth Amendment Act", (1998): Study Series no. 70, NIUA, New Delhi

fairly modest pace. The large cities/urban agglomerations like Mumbai, Delhi and Kolkata are exploding. The development of housing and infrastructure services has not kept pace with this rapid growth and thus as high as 50 to 60 per cent of population of large cities are living in informal/sub-standard settlements. The distribution of resources in cities, especially in metropolises, has been favourable towards the middle and high-income groups. The iniquitous distribution of resources, including land for housing, civic services and economic opportunities, have widened the gaps between the "planned city" and the "informal city".

The declining trend of urbanisation and urban poverty, thereby, has no reflection on the serious deficiencies of housing stock, urban infrastructure and basic urban services, especially in low-income settlements. This is largely due to growing urban population, low public investment on urban services and poor implementation of development schemes. The large cities/urban agglomerations like Mumbai, Delhi and Kolkatta are exploding with a population of over 10 mn people. Several researches show that in these large cities as high as 50 to 60 per cent of the city's population is living in informal or sub-standard settlement. They are the most vulnerable sections of the city's population. They are more often situated on marginal lands prone to land slides, flooding or contamination through industrial wastes. The situation is further aggravated as these settlements have little or no access to land tenure and basic services, including water and sanitation.

Notwithstanding the contributions of urban poor, all key policies[40], most legislations[41] and almost all institutions have seemingly favoured the marginalisation of the urban poor in Indian cities. A rather disturbing trend of the spatial exclusion of the poor has been observed in all metropolises, irrespective of political ideology of the ruling party, with full support of other sections of the society whereby prime land in the city's core are being cleared by relocating the poor to the city's periphery. The poor are being pushed out of the city to areas where services are poor, investment is low and livelihoods opportunities are few and far. Reduced state expenditure on welfare schemes and subsidies, cut backs in employment and privatisation of basic services, together, have increased the vulnerability of the urban poor.

Since Independence, policies and programmes to combat urban poverty have not followed a straight course. There is a lack of clearly articulated policy for urban poor and their shelter; while the National Slum Policy has been drafted it hasn't yet been tabled in the Parliament. Most schemes/programmes for urban poverty alleviation have gone through numerous permutations, been renamed under different headings, restructured or combined and managed by a range of different agencies. They have also been targeted at different interest groups, and/or been redefined at state level where local politicians and bureaucrats have sought to put a local spin on centrally driven programmes, or to develop their own.

International aid by most multilateral agencies is largely for improving city's infrastructure. Only Urban Poverty Alleviation (UPA) programmes and select components of the assistance for urban water supply and sanitation and housing projects, are targeted directly at the poor. Only eight per cent of the total on-going external assistance, is directed towards UPA programmes.

[40] Five-Year plans of Government of India and Master Plans of Cities

[41] The Public Premises (Eviction Of Unauthorised Occupants) Act, 1971; Urban Land (Ceiling & Regulation) Act, 1972; he Requisitioning And Acquisition Of Immovable Property Act, 1952; Slum (Clearance and Improvement) Act, 1955)

CHAPTER 2

# Settings of the Study: Macro (Delhi) and Micro (Wards)

## 2.1 Changing Geographical and Physiographic Features[1]

Two natural features of the city probably made it a favourite place for various rulers, the Ridge and the River Yamuna. The former providing natural protection, and the latter a perennial source of water right at the gateway to the vast Indo-Gangetic plains. The various cities of Delhi through the ages have been craddled by these two features. Neither of them have been transgressed. Today, when their physical protective features are no longer of importance they are destroyed with impunity. Large portions of the ridge have been blasted to colonise post independence refugees, while the Yamuna is now merely a drain, tapped much before it trickles into the capital.

The area under Delhi consists of the ridge and its forest, undulating surfaces, plains and flood plains, the Najafgarh drain and the River Yamuna.

The Ridge is a part of the Aravalli range which enters Delhi from the south, forking into two and expanding into a wide tableland. One part stems from Mehrauli to the bank of the Yamuna, while the other passes by the historic Tughlakabad fort to culminate at present day South Delhi. The ridge forms the principal watershed in the area, the eastern drainage passing into the Yamuna and the western into the Najafgarh basin. The width of the ridge varies from 50 – 100 meters at Wazirabad to as wide as 2.5 km near Chanakyapuri. A detatched portion of rocky relief is in North-West Delhi. The total ridge area in the state is approximately 77.9 sq kms.

The ridge is divided into Northern Ridge (Delhi university), South central Ridge (Mehrauli) and Southern Ridge. In 1912, when Delhi became the capital of British India, the ridge was declared a reverse forest under the Indian Forest Act, 1913. The Central ridge obtained a similar status in 1942. Due to rapid urbanisation and increasing pressure on land, during 1920–30 a major portion of the ridge near Delhi University was blasted away to connect residential and business enterprises and to provide access to a high income residential colony of Karol Bagh. However, in 1980, the Northern and Southern Ridge were again declared reserved forests. At present only two segments (greatly diminished over time) remain as green buffers: the Northern Ridge and the Central Ridge.

The area lying between the Ridge and the Yamuna flood plain, is a basin in west Delhi (also known as *Dabar*). The area is drier than the rest of the state with evidence of wind erosion and deposition such as deflation hollows and dunes. A low-lying tract near village Gumanhara, close to the border of Haryana, is a lacustrine basin. The Najafgarh Drain, flows in a North-east direction and joins the Yamuna near Wazirabad. The drain reportedly covered an area of 22,663 ha and was 4.2 mts deep a century ago, it has been drained and cultivated since 1940.

The Yamuna flood plain covers an area of 161 sq kms. extending upto a maximum of 14 kms. from the river in the north. It has three subdivisions: new *Khadar* or the current flood plain; old *Khadar* or the earlier flood plain; and *Bangar* or the upper alluvial plain. The new *Khadar* is a low-lying area with recent river deposits. It forms a narrow strip along the west bank and a wider belt adjoining the east bank of the Yamuna. It is characterised by wide silt, which

[1] This section has drawn from the following sources: " Saving the Delhi Ridge" Report by Srishti, May 1994

is broken by hollows holding standing water. The old *Khadar*, or the lower alluvial plain, is adjacent to the new *Khadar* on the west of Yamuna and is broken into northern and southern sections by an extension of Ridge. The uneven terrain prone to floods, has remnants of fluvial features such as ox-bow lakes, meander cores, swamps and marshes. *Bangar*, or the upper alluvial plain, composed of older fluvial deposits spread in the north-western section of the state, is more elevated and drier than the *Khadar*. River features have been wiped out by land reclamation and leveling activities.

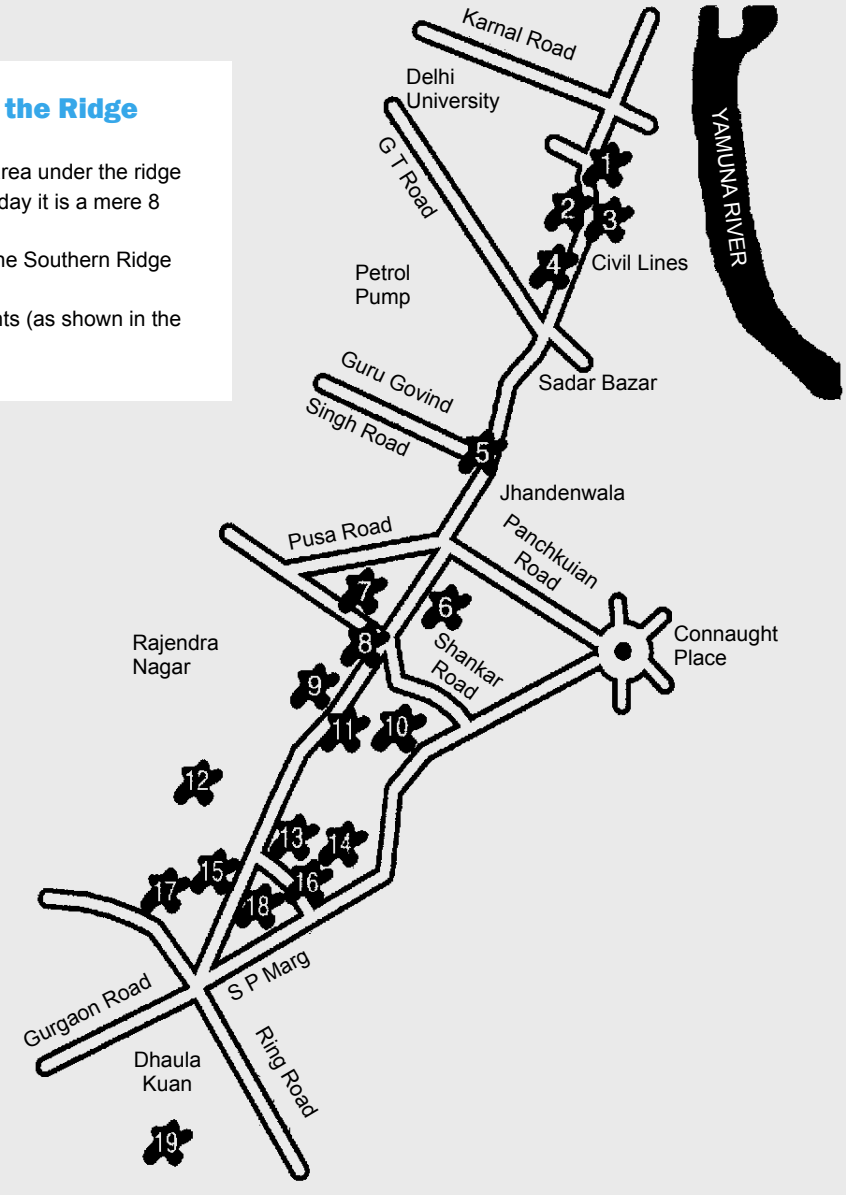
When New Delhi was planned as the capital of India in the year 1912 its location between the Ridge – a green lung that also acted as a buffer against the dry winds from the western dessert – and the Yamuna, which provided a good flow of clean water, was the main reason for choosing this site. The topography created a drainage system that carried rain and storm water from the higher elevations of the West to the Yamuna, providing a natural drainage.

There is strong correlation between the physiographic divisions and the city's socio-economic structure. Low-lying flood-prone new *Khadar* tracts are occupied by low-income housing. The

## Places of Encroachment on the Ridge

### Encroachment on the Ridge

- In 1960, 48 per cent of the area under the ridge was covered with forests, today it is a mere 8 per cent
- The MCD is using a part of he Southern Ridge for dumping garbage
- Majority of the encroachments (as shown in the map above) are by the rich.

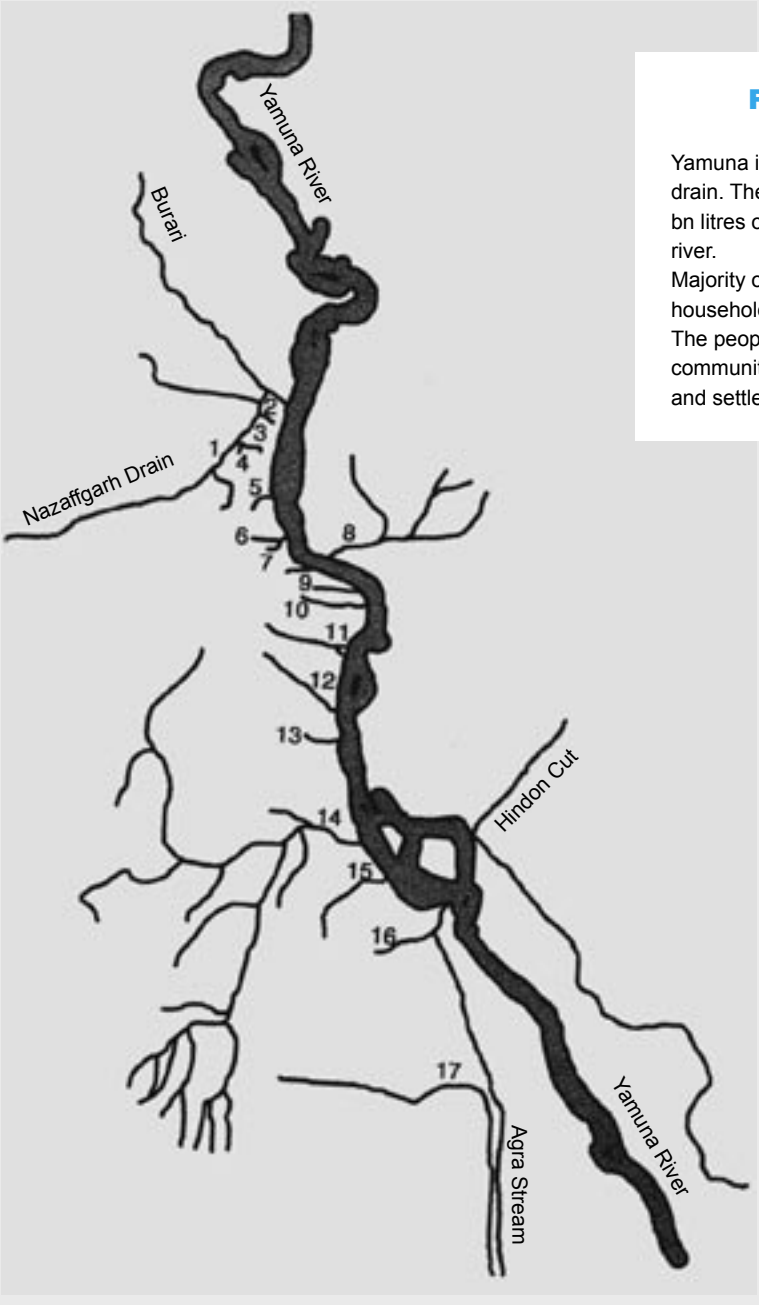



Legend:

1. Police camp
2. DESU Power Tower
3. Converted into a Park
4. Hindurao Hospital
5. Blasting Site
6. Ravindra Rangshala
7. Gurudwara Nanak Sahib and petrol pump
8. Widening of Shankar Road
9. Schools (Manvsthali, Army Public, Springdales and J. D. Tytler)
10. Talkatora Complex
11. Army Camp
12. Petrol Pump
13. Buddha Jyanti Park
14. Delhi Polo Ground
15. Army School Housing Complex
16. SITE
17. Shooting Range
18. Mahavir Jyanti Park
19. Residential Colonies

Source: "Yeh Dilli Kiski Hai", Hazard Centre, November 2003, New Delhi

## Drains/Nallas meeting River Yamuna in Delhi




### Pollution of River Yamuna

Yamuna is no longer a river – it is nothing more then a drain. The reason that every day approximately 2.90 bn litres of untreated sewage finds its way into the river.

Majority of this is generated in the relatively richer households.

The people who suffer are the residents of informal communities located along the river and the towns and settlements located downstream.

Legend:

1. Najafgarh Drain
2. Magzine Road Nalla
3. Sweeper Colony Nalla
4. Khyber Pass Nalla
5. Metcalf House Nalla
6. Kudisiya Bagh Nalla
7. Moat Nalla
8. Trans Yamuna MCD Nalla
9. Mori gate Nalla
10. Civil Mill Nalla
11. Power House Nalla
12. Sen Nursing Home Nalla
13. Nalla No. 14
14. Barapura Nalla
15. Maharani Bagh Nalla
16. Kalkaji Nalla
17. Tughlakabad Nalla

Source: "Yeh Dilli Kiski Hai", Hazard Centre, November 2003, New Delhi

trans-Yamuna Khadar area has the sprawling settlement of Shahdara and the large numbers of resettlement colonies, where living conditions are poor. The old *Khadar*, *Bangar* and *Dabar* areas house the middle class with some sectors under mixed-middle and low-income groups. The southern *Kohi* lands form the residential zone of the elite and upper classes.

## 2.2 Delhi: Sketching the Past and the Present

### 2.2.1 Delhi: What It Was

Delhi has been a unique city in the past and it continues to be distinctive and matchless in many ways in present times as well, although for entirely different reasons. Located at a critical point, where the narrowing Gangetic Plain gets pinched between the impinging Aravalli

hills and Rajasthan deserts in the south and the encroaching foothills of the great mountain ranges in the north, Delhi commanded a broad corridor between Punjab and Hindustan. Those who could patrol this broad corridor with imperial resources ruled north India and commanded the trade through the land corridor of the northwest frontier. The escarpment of the Aravalli ridge and ever flowing Yamuna, provided both security as well as rich and varied natural water systems (numerous rivulets, *nallah*, lakes, ponds) providing copious and reliable supply of water. Rich fauna and flora sustained cattle and animal stock and pastoral communities and proximity to the river brought agricultural commercial benefits. The escarpment of ridge, together with its hinterland deserts of Rajasthan, provided unlimited red stone and other building materials.

Historically, the city has been foremost in political importance with successive dynasties choosing it as their seat of power. Delhi has been the political capital of many dynasties – Slave Dynasty, *Khiljis, Tughlaqs, Sayyads* and *Lodis* between the 12th and early 16th centuries, and later the capital of *Mughals* in the 17th century and British in the 20th century. Remnants of this glorious past survive as historical monuments in different parts of the city. The city has the distinction of inheriting layouts, landscape and remains of all seven cities[2] that came up on this site.

The city of Delhi passed to the British in 1803 AD, however, between this time and when the capital of British Empire was shifted to Delhi in 1911, the city was a typical pre-industrial provincial town, with deserted monuments, agricultural fields and pastoral villages. Unlike the flourishing port cities of Calcutta, Madras and Bombay, Delhi lost its glory in the years following the Revolt of 1857. Apart from remains of Mughal royalty and rising influence of British culture, the city continued to thrive on traditional arts and crafts, customs and Urdu literature. Local administration underwent a major transformation after 1857, when the first Municipality and District Boards were established for city and rural administration respectively. It was only when the capital of British Empire was shifted from Calcutta, that Delhi got its present prestige. The eighth city of New Delhi took shape in the imperial style of architecture.

The story of modern Delhi dates back to 1857 when the British troops put down a rebellion with an iron fist to occupy the seat of Mughal power. Around this time large areas around the Red Fort were cleared of settlements in the name of security, majority of these settlements housed the poor. In 1874, the Delhi Municipal Committee acquired large areas in and around the old city for urban growth. In 1890, the railways pierced through the ramparts of Red Fort. In 1911, the capital of the British Empire was shifted from Calcutta to Delhi and at this point New Delhi occupied a large area, almost three times the size of Old Delhi. Along with the growth of the formal settlement, informal settlements also started springing up. In 1924, the settlement of *Basti Harphool Singh* was declared as the first slum and an area lying across the North ridge was acquired for resettlement. In 1936, numerous *katras* (localities) were artisans, destitute, service castes and cobblers used to reside were cleared in the name of 'city beautification'.

This process of development continued with only some modifications after the nation won Independence from colonial domination. In 1948, the population of Delhi was a little over 1 mn, but the partition brought almost 0.45 mn refugees streaming into the city from the newly formed Pakistan. These refugees were rehabilitated by a special Ministry set up for the purpose by the central government, in housing colonies in various parts of the city and then at its periphery. These colonies severely overloaded the capacity of the civic services of the city. One of the consequences of such "development" was that untreated sullage passed directly into storm water drains and found its way to the River Yamuna just downstream of the intake point for the municipal water supply system. As a consequence, in 1955 the domestic water supply system was so badly contaminated that there was an outbreak of jaundice which left over 600 people dead. Following a systematic enquiry into the causes of ill health, a barrage was constructed across the river to separate the sullage from the drinking water.

[2] Qutub Shahar, Siri fort, Tughlaqabad, Jahanpanah, Firozabad, Shahajahanabad, Civil Lines and Lutyen's Delhi

By 1956 there was such a severe shortage of housing that 567 "unauthorised colonies" had come up to make up for the shortfall, housing almost 1 mn people. These colonies were not recognised by the local authorities and thus were not eligible for municipal services. However, they provided an important voting bank and so the government was compelled to regularise these colonies in order to provide them with municipal services.[3]

In 1957, the Delhi Development Authority (DDA) was constituted by an Act of the Parliament to develop the city according to the scientific principles of urban management. The authority immediately acquired 14,000 hectares of land in the region, displacing rural settlements in order to provide for urban housing and services.

In the same year, the authorities decided that it was time to clean the city again. Using draconian powers, the city authorities evicted almost 0.9 mn people from slums located in valuable commercial and residential areas and moved them to over 40 resettlement colonies in low lying areas in Trans-Yamuna and on the fringes of the city. This rehabilitation was in marked contrast to that of 1948, each family was allotted only 25 sq m of land on which to build a house. Basic amenities like water, toilets, drainage and electricity were provided on a community level and some schemes for health and education appeared on paper. There was still no attention given to economic rehabilitation. The lack of adequate basic services was cruelly demonstrated when over 1200 people died of cholera in 1988 in these resettlement colonies.[4] A government enquiry committee agreed that the water had been drawn from shallow handpumps and was contaminated by untreated sullage. However, no concrete attempts were made to remedy the situation.

The Second Master Plan for the city was initiated in 1962, but other priorities took over that year. India keen to demonstrate its 'development' and 'progress' organised the Asian Games and the entire infrastructure of the city was geared for the event. Approximately, 1 mn labourers are estimated to have migrated into the city to construct various stadia, hotels, roads, flyovers and residential complexes for the games. As expected, a majority of the migrant labourers continued to stay on in Delhi, there were however no provisions for the housing of these labourers in either the Master plan or in ad-hoc schemes. Thus the people who built the city were again consigned to shanty towns or the periphery of the city, squatting wherever empty land was available. When the second Master Plan came into force in 1986, it traced the rapid growth of the city to the in-migration of people from surrounding states rather than to the fiscal and industrial policies that made Delhi an attractive place. Eighteen years since then these trends have continued and in fact, intensified.

### 2.2.2 Delhi: What It Is Now

At present, Delhi with a population of 13.78 mn[5] is the third largest,[6] the fastest growing and most densely populated city in India. Delhi has been growing by approximately 1,000 persons every day for a number of years. Migration has roughly averaged 1.3 times the natural growth in Delhi. Release of land and funds for shelter and infrastructure services including water, sanitation, schools, hospitals, transport, etc, have not matched the phenomenal growth of the city[7] which has led to the proliferation of informal and sub-standard settlements with inadequate provision of basic amenities and services.

While in absolute terms, Delhi's population has been increasing rapidly over the decades, the rate of growth has been declining since 1981–91. While the growth rate peaked at 53 per cent during the decade 1971–81, it has subsequently been decreasing, from 51.5 per cent during 1981–91 to 46.3 per cent during 1991–2001. Despite the decline, the current growth rate of Delhi is more than double the national average (21.3 %) and much higher than that of large cities/urban agglomerations in the country.

[3] Ministry of Urban Affairs and Environment, 1997

[4] "Delhi Environment Status Report", WWF, 1995

[5] Census 2001

[6] Mumbai is the largest city and Kolkata the second largest in terms of population

[7] Delhi Urban Environment and Infrastructure Improvement Project, GHK, Oct. 2000 (Revised draft), p.4

## Table 1: Population Growth and Composition (1951–2001)[8]

| Year | Population | | | Growth Rate (%) | | |
|---|---|---|---|---|---|---|
| | Urban | Rural | Total | Urban | Rural | Total |
| 1951 | 1437134 | 306938 | 1744072 | - | - | - |
| 1961 | 2359408 | 299204 | 2658612 | 64.2 | -2.5 | 52.4 |
| 1971 | 3647023 | 418675 | 4065698 | 54.6 | 39.9 | 52.9 |
| 1981 | 5768200 | 452206 | 6220406 | 58.2 | 8.0 | 53.0 |
| 1991 | 8471625 | 949019 | 9420644 | 46.9 | 109.9 | 51.5 |
| 2001 | 12819761 | 963275 | 13782976 | 51.3 | 1.5 | 46.3 |

The state of Delhi is spread over an area of 1,486 sq kms, of which the developed urban area is 525 sq kms. (35 % of the total area) and urban extensions as well as the urbanised rural area is 961 sq kms. Delhi has the distinction of being the most urbanised state in the country, 93 per cent (12.81 mn) of the population lives in urban areas, whereas only 7 per cent (0.96 mn) lives in rural areas.[9] An unusually high rate of urban growth rate viz. 72.5 per cent was recorded during the decade 1941–51 which can be attributed to the influx of migrants from the newly formed Pakistan. Majority of the migrants were rehabilitated within the urban limits of the capital.

In the decade 1951–61, urban areas of Delhi recorded a growth rate of 64.2 per cent while the rural areas recorded a negative rate. In contrast, both urban and rural areas saw impressive growth in the next decade (1961–71). The seventies saw further acceleration in the growth of urban population and a substantial deceleration in the growth of rural population. The negative demographic growth in rural Delhi in 1951–61 and a very low growth rate in 1971–81 cannot be interpreted as decelerated migration, instead it can to a large extent, be attributed to transformation of a number of rural settlements into towns that became a part of the Delhi urban agglomeration. The pattern of growth in 1980s and 1990s is quite different from earlier decades. There was a phenomenal increase in growth rate of rural population, from 8 per cent in 1971–81 to 109.9 per cent in 1981–91. This trend indicates that increasingly the rural hinterland of Delhi is absorbing a large proportion of migrants. Correspondingly, there was a decline in the growth rate of urban population from 58 per cent in 1971–81 to 46.9 per cent in 1981–91. However, the decade of 1991–2001 has seen acceleration in demographic growth, which is significant given that growth of most metropolitan cities has declined along with the overall deceleration of urban growth in the country. The emergence of new towns is one of the main reasons for this acceleration, as many as 33 villages have been classified as new urban areas in the 2001 Census. The dynamics of growth in Delhi has unleashed a strong process of sub-urbanisation in the hinterland.

Delhi is the most densely populated city in the country with an average density of 9,294[10] persons per sq km This is much higher than the figure recorded in 1991 of 6,352 persons per sq km There are, however, spatial variations in population densities within the city, while the richer areas like south Delhi have densities of 1,300

**Figure 1: Population Growth and Composition (Urban & Rural)**

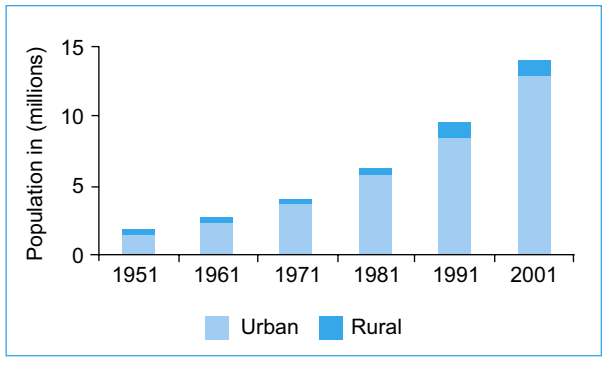
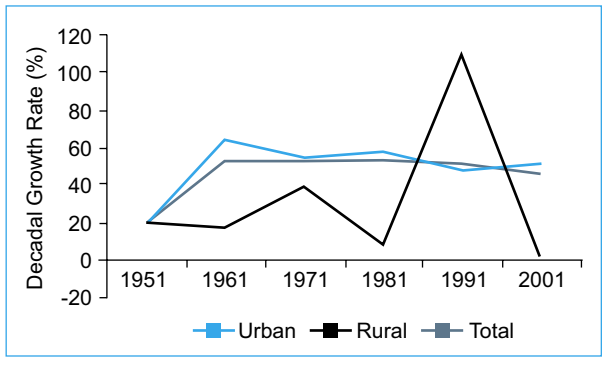



**Figure 2: Population Growth in Delhi (1951–2001)**




[8] Source: Delhi Statistical Handbook, 2001–02

[9] Census 2001

persons per sq km, the corresponding figures for older parts of the city are as high as 80,000 persons per sq km

Undeniably, Delhi is the most prosperous among the States and Union Territories of India. The metropolis had a major thrust of developmental activities in post independence period. It emerged as a major industrial and commercial centre with phenomenal growth in manufacturing, trading, communications and transport activities. The per capita State Domestic Product in the year 2000–01 was about 2.4 times higher than the national average. The growth rate of income during the past two decades has been similar to that of the country, the per capita income at current prices increased from Rs 4,145 during 1980–81 to Rs 11,373 during 1990–91.

The stronger economic position of Delhi is reflected in the high employment rate compared to the all India average for all urban centres and other metro cities. The employment rate for men in urban Delhi has always been higher than that of the country. The percentage of workers in urban Delhi including marginal workers is 52.40[11] (higher than the corresponding figures of 50.8 for urban India). The employment scenario for women in urban Delhi is very poor; the work participation rate for women in urban Delhi (10.5%) is much less than the average for all urban centres in the country (13.5%). Employment opportunities for women in urban Delhi are much lower as compared to other metro cities and even smaller towns. The employment rates in rural Delhi are alarmingly low, both for men and women. The economic activities that were planned for the periphery of Delhi under the Master Plan did not come up in the manner anticipated. Also the process of agricultural land being put to urban use or being vacant for speculative purposes, adversely affected the job opportunities in the primary sector. There was no compensatory growth of urban linked activities, which could have absorbed the workforce displaced in agriculture. Importantly, a large proportion of migrants have been flocking to the urban periphery.

Delhi has posted significant gains vis-à-vis literacy and health. Male literacy rates have increased from 70 per cent in 1961 to 87 per cent in 1991, while the female literacy rate has increased from 50 per cent in 1961 to 75 per cent in 1991. The Infant Mortality Rate (IMR) has declined significantly from 32 per 1000 live births in 1991 to 23 per 1000 live births in 2000. Despite these gains, Delhi's performance on gender-based development indicators has been dismal. The sex ratio in Delhi is 821 females for every 1000 males which is very low compared to the national average and that of other cities. It is interesting to note that the sex ratio in urban Delhi has increased continuously since 1931. In case of rural Delhi the case is the opposite, the sex ratio has declined from 916 in 1901 to 806 in 2003[12] and is much below the national average of 933. This indicates that male selectivity among migrants in urban Delhi has gone down and more family migrations are taking place. However, the number of females among inter-state migrants to rural Delhi was much less in the nineties than in earlier decades, thus the decrease in sex ratio.

There is a wide gap between the demand and supply of basic services and facilities including water supply, sanitation, solid waste management and electricity. The norms for provision of basic amenities are different for formal and informal housing (Table 2). What is even more lamentable is the actual level of provision in informal communities, which is far below any acceptable standards and norms. While the norm for provision of water supply to informal settlements is 40 lpcd, the actual provision is much lower at 30 lpcd[13]. The same is the case with provision for sanitation facilities, while the prescribed norm is one community toilet seat for 25 people, there are more than hundred people dependent on one toilet seat and there are innumerable settlements where even this rudimentary facility isn't available and communities have to resort to defecation in the open. The inadequate and poor quality of basic services provision is creating poor environmental conditions in informal settlements that are potential hazards.

[10] Census 2001

[11] Census, 2001

[12] Socio-Economic Profile of Delhi, 2003–04, Planning Department, NCT of Delhi

[13] Litres per capita per day

### Table 2: Inequitable Provision of Basic Services[14]

| Basic Services | Norms for Formal Housing | Norms for Informal housing | Actual Provision in Informal Settlements |
|---|---|---|---|
| Water | 363 lpcd<br>Individual Supply | 40 lpcd, 1 community stand post for 150 persons | 30 lpcd |
| Sanitation | Individual toilets connected to city level sewerage system | Community toilets; one seat for 25 persons | One seat for 111 persons<br>only 75 per cent with sewerage cover |
| Solid Waste Management | Household level collection | Deposit at nearest garbage point | 44 per cent gap for all city |
| Electricity | Individual metered connections<br><br>150 units per individual per day | Street light and some individual metered connections through group contractor<br><br>12 units per individual per day | 30 per cent gap; Complete coverage with un-metered connections<br><br>8 units per individual per day |

## 2.3 The Informal Settlements of Delhi: A Tale or Tail of 'Another City'

As Delhi swells due to large influx of migrants from smaller cities, towns and rural areas with unmatched provision of housing and basic amenities, 'informal settlements' increase in numbers, sizes and densities.

### 2.3.1 Growth of Informal Settlements

In 1999, there were over 1,100 slum clusters[15] with an estimated population of 3.2 mn.[16] Additionally there were 1500 unauthorised colonies with an estimated population of 3.5 mn, 52 resettlement colonies and 216 urban villages with estimated population of 2 mn and 0.6 mn respectively.[17] Thus, in 1999, more than 10.3 mn people, i.e., 78 per cent of the city's population was living in marginal/sub-standard settlements. In 2001, as per estimates of the Delhi Urban Environment and Infrastructure Improvement Project (DUEIIP) 76 per cent of the city's population was residing in sub-standard settlements.

### Table 3: Informal Settlements in Delhi (2001)[18]

| Category | Estimates as per DUEIIP, 2001 | |
|---|---|---|
| | Population (in million) | % Of total population |
| Jhuggi Jhopri Clusters/Squatters | 2.07 | 14.82 |
| Designated Slum Areas | 2.66 | 19.05 |
| Unauthorised Settlements | 0.74 | 5.30 |
| Regularised unauthorised colonies | 1.78 | 12.75 |
| Resettlement colonies | 1.78 | 12.75 |
| Rural Villages | 0.74 | 5.30 |
| Urban villages | 0.89 | 6.37 |
| Planned Colonies | 3.31 | 23.71 |
| Total | 13.96 | 100.00 |

[14] "Report of a Convention", Sajha Manch, June 1999 and "Delhi Fact File, National Capital Region Planning Board, 1999.

[15] Jhuggi Jhopri Clusters

[16] Slum Department of Municipal Corporation of Delhi (MCD)

[17] Slum Department of Municipal Corporation of Delhi (MCD)

[18] Sources: DUEIIP, Status Report for Delhi 21, GOI & MoE & F, January 2001, Page 1, Chapter 7 & Amitabh Kundu, "Provision of tenurial security for the urban poor in Delhi: Recent trends and future perspectives"

### 2.3.2 Spatial Distribution of Informal Settlements

During the 1990s, the largest concentrations of slums were in the built-up areas of North, South (I), and West (II) Delhi, as well as in the older parts of the city, namely, Civil Lines and Karol Bagh. Large squatter populations were also found in North-West (I), West (I), and Trans-Yamuna zones but, given the size of these zones, the concentration was relatively low. However, in the last five years, there has been large-scale relocation of "informal settlements" from various parts of the city to its periphery. Along with polluting industries, informal settlements have also been pushed out of the city, all in the name of city "cleaning" and "beautification". Those that have been primary in building the city and its economy are being vehemently excluded from its services/benefits.

**Table 4: Zonal Distribution of Slum Population in Delhi (1994)[19]**

| Zones | | Population | Slum population | % of Total Population |
|---|---|---|---|---|
| A | Old City | 10.6 | 1.10 | 10.4 |
| B | Karol Bagh | 4.2 | 1.40 | 33.3 |
| C | Civil Lines | 7.5 | 3.00 | 40.0 |
| D | New Delhi | 7.5 | 1.97 | 26.3 |
| E | Trans-Yamuna | 21.3 | 3.01 | 14.1 |
| F | S. Delhi –I | 12.7 | 5.97 | 47.0 |
| G | W. Delhi–I | 14.3 | 2.96 | 20.7 |
| H | N W Delhi | 17.7 | 3.29 | 18.6 |
| I | S Delhi-II | 2.5 | 0.10 | 4.0 |
| J | W Delhi–II | 2.5 | 0.87 | 34.8 |
| K | W Delhi–III | 5.5 | 0.50 | 9.1 |
| L | N W Delhi–II | 0 | 0.00 | 0.0 |
| M | N W Delhi-III | 3.5 | 0.66 | 18.9 |
| N | River Yamuna | 0 | 0.00 | 0.0 |
| O | N Delhi | 2.5 | 1.30 | 52.0 |
| P | | 3 | 0.10 | 3.3 |
| Total | | 115.25 | 26.23 | |

### 2.3.3 Types of Informal Low-Income Settlements

#### 2.3.3.1 Unauthorised Colonies: A Strange Urban Phenomenon

The unauthorised settlements are highly heterogeneous in terms of their socio-economic characteristics. A large majority of the population belongs to middle and high-income groups who have legal title to land as they have mostly purchased it from rural landowners. The title to land, however, does not confer legality to the settlements as these have come up in total violation of the Master Plan, land use restrictions and building standards. Access to basic amenities here varies significantly across settlements, depending upon the population composition and willingness to incur private expenditure on these. In a few such settlements, people have been able to get the services even from the public agencies through political connections. Besides, private investment made by households is also high.

While 417 unauthorised colonies were identified in 1974, their numbers had increased to 612 by 1984. Latest figures suggest, there are 1,071 unauthorised colonies[20] in which more than 3.5 mn people reside. To check the continuous unauthorised constructions, the Government enforced the Delhi Lands (Restrictions on Transfer) Act 1972, which stipulated a ban on the sale of land notified for acquisition. The purpose of the Act was, however, defeated as land transfers continued through deals by issuing 'Power of Attorney'.

[19] Source: Report on Slums in Delhi, Slum & JJ Department MCD, 1994

[20] Source: "Building Coalitions: Situational Analysis of Delhi Slums", CARE India (Page 20)

### 2.3.3.2 Jhuggi Jhompri (JJ) or Squatter Settlements: Mirror of Human Rights Violations

*Jhuggi Jhompri* clusters are encroachments on government land, usually earmarked for parks, or open spaces. These settlements have hutments made of a range of materials ranging from tarpaulin covers, plastic sheets, to tin sheets and brick construction. JJ Clusters are not entitled to any civic amenities.

The growth in the numbers and population of informal settlements has continued unabated in Delhi. In 1951, there were 199 JJ clusters in which 64,000 people resided. These numbers increased throughout the next two decades (1951–1971). There was a steep in the number of *Jhuggi Jhompri* clusters from 1,124 to 290 between 1971 and 1981, decline as a result of the massive demolitions and relocations during the Emergency. But by 1997 the number of clusters had climbed back to 1,100 accommodating approximately 600,000 households. The slum population obtained by applying the average of five persons per household would be about three mn (more than the figure in there Table three by about a mn) or 23 per cent of the total urban population, a figure corroborated in several documents of DDA and the Government of Delhi.

**Table 5: Growth of Squatter Settlements (1951–1999)[21]**

| Year | JJ Clusters | No of Jhuggis | Population | Growth Rate (%) |
|---|---|---|---|---|
| 1951 | 199 | 12,749 | 63,745 | - |
| 1961 | 544 | 42,815 | 2,14,075 | 235.83 |
| 1971 | 1124 | 62,594 | 3,12,970 | 46.19 |
| 1981 | 290 | 98,709 | 4,93,545 | 57.69 |
| 1991 | 929 | 2,59,344 | 12,96,720 | 162.74 |
| 1994 | 1080 | 4,80,929 | 23,40,645 | 80.51 |
| 1997 | 1100 | 6,00,000 | 30,00,000 | - |
| 1999 | 1160 | 6,00,000 | 32,00,000 | - |

The above figures indicate that the slum population has grown at an annual growth rate of 8.4 per cent, much higher than that of the overall urban population. The total land occupied by slums is approximately 10 square kilometres, approximately 3 per cent of the total residential area of urban Delhi.[22] The capacity of households to access basic amenities in JJ clusters is extremely poor as government agencies are reluctant to provide services to people occupying public land illegally; also, there is an apprehension that this may give them a basis for making legal claims. Although there are several planned schemes for improving the micro-environment in slums and squatter settlements, the total allocation of funds for the purpose is extremely low. The slum dwellers have, nonetheless, been able to invest in their dwelling units, rent, buy and sell properties.

### 2.3.3.3 Resettlement Colonies: A Long Saga of Demolition, Relocation and Shirking Shelter Size of Urban Poor

Approximately 2 mn people live in 52 resettlement colonies in Delhi. These resettlement colonies tell the story of demolition, relocation and a systematic process of marginalisation of the urban poor whereby they have been shifted from the city to its periphery. The resettlement process has violated all parameters of the right to shelter.[23]

A scheme for resettling squatters in and around the city was launched in early 1960s. It was done with the twin objective of decongesting and improving the environment of the inner city

[21] Sources: Society for Development Studies and High level committee on unauthorised colonies and Delhi 1999, A fact Sheet, National capital region Planning Board, Page 20

[22] Amitabh Kundu, "Provision of tenurial security for the urban poor in Delhi: Recent trends and future perspectives"

[23] Restructuring New Delhi's Urban Habitat: Building an Apartheid City, Housing and Land Rights Network and Habitat International Coalition, 2000

and for providing improved civic amenities to slum dwellers. In this phase, the resettlement colonies were developed near the city core and place of work, giving legal title to the people who were residing in the city before 1960. These resettlement colonies were planned in the centre of middle or high-income residential areas, with a view of making them an integral part of the neighborhood. In all 3600 households that had come to Delhi prior to 1960 were given plots measuring 80 sq yards (67 sq mts.) on a lease of 99 years. A decade after the resettlement was completed, a large scale selling of property by the re-settlers began as the plot sizes were large and the attracted higher income families.

For the squatters that came up after 1960 the plan was to relocate them on plots of 21 sq mts; each, with shared services. They were permitted to construct temporary huts on designated plots and were charged a rent of Rs 4.50, which was enhanced to Rs 8.00 after 1967. In all 46,000 such plots were alloted in resettlement colonies. In all 18 resettlement colonies came up during the period 1960-1975. These colonies, however, could not be regularised as the plot sizes were below the norm stipulated in the Master Plan.

This approach of on-site up-gradation, however, could not be sustained for long as the cost of land in the city was increasing. By the late sixties the Delhi Government had abandoned all such resettlement schemes. Resettlement of slum population was taken up on a massive scale in the second phase, during 1975–77. These resettlement colonies were located on the city periphery, many came up outside the urban limits of Delhi and few were even located on agricultural land. During this phase, the government made efforts to relocate 1,50,000 squatter families from the walled city and adjacent areas. This relocation resulted in the emergence of 26 new colonies, each household was given a plot measuring 21 sq mts. on a rental basis. Due to considerable public resentment the government took a decision in early 1980s to increase the plot size to 26 sq mts and confer leasehold rights to all the re-settlers on the payment of a small fee. Since 1983 built-up tenements were also provided in resettlement colonies.

Despite official claims, it is difficult to establish whether the re-settlers had better access to infrastructure facilities and amenities by the moving into the new colonies. A study undertaken by Indian Institute of Public Administration in 1980 brought to light that for a majority of the re-settlers the conditions vis-à-vis access to water, toilets and medical facilities had in fact deteriorated after relocating to the new colonies.

People in resettlement sites mostly have leasehold properties and, therefore, have no fear of eviction. The level of amenities provided by public agencies, however, is very low because of scarcity of funds and low collection of user charges. Poor re-settlers, who have been rendered vulnerable because of economic displacement, are hardly in a position to improve their environment either through individual or group efforts. The conditions worsened as a large number of plots were purchased by speculators, who made no investments in land or housing. The quality of living, thus, was extremely low in settlements in the initial stage of development. However, due to the availability of space and new investments made by public agencies, there is a distinct improvement over time, bringing them up to par with that of designated slums in terms of the quality of their micro-environment.

#### 2.3.3.4 Urban Villages

Urban Delhi has been expanding rapidly into the rural environs and, in the process swallowing up vast tracts of agricultural land. With the acquisition of cultivated lands the residential cores of villages are also becoming parts of city limits. Once the farmland around a village is acquired by the DDA, the village is declared an urban village. While officially an urban village is entitled to all civic amenities and services, the reality is very different as a result of which urban villages have joined the ranks of slums in the city. A total of 0.6 mn people live in 216 urban villages in Delhi.

Urban villages do not have a problem with land tenure as most of the residents have either inherited or purchased land and built houses within *lal dora* (permissible) limits, implying no violation of the Master Plan. Private investment in housing and shops has unfortunately resulted in congestion and pressure on existing limited facilities, particularly in urban villages.

Public investment has been low which is further constrained by the non-availability of space. Despite these deficiencies, the quality of life in urban villages is better than resettlement sites as well as designated slums.

## 2.4 Settings of Policies, Legislation and Institution: Urban Governance in Delhi or the Lack of It

Delhi can safely be called an experimental graveyard of many legislative and administrative models or approaches applied to the city to improve its governance. In 1911, when the British moved the Imperial capital to Delhi, the central government directly managed the city administration through a Commissioner. Ninety-three years later, the control over urban land, city planning and service provisions, still remain in the hands of the central government. It is the central government and its nominees (Lieutenant Governor who is a nominee of the President of India; the Commissioner of Municipal Corporation of Delhi who is appointed by the central government; Ministry of Home Affairs; and Ministry of Urban Development) that decide and influence the present and future of the city, not the people's representatives in the State Legislative Assembly and the Municipal Corporation. The existing situation in the city completely negates the universal belief that no area can be denied the right to self-government. The direct interference of the central government in the city's administration further denies the right of citizen to participate in city governance and renders the constitutional belief of decentralised 'local self-governance' expressed through the 74$^{th}$ Constitutional Amendment in 1994, meaningless.

Delhi has the presence of all three layers of governance, vis-à-vis, central, state/provincial and local. Altogether there are 118 departments governing and managing the city of Delhi. There are three planning boards for city and regional planning, namely, National Capital Region Planning Board (NCRPB), Delhi Metropolitan Council (DMC) and Delhi Development Authority (DDA). There are a number of service providers for Delhi, namely, Municipal Corporation of Delhi (MCD), New Delhi Municipal Corporation (NDMC), Delhi Cantonment Board (DCB), Delhi Jal Board (DJB), etc.

**Table 6: Complexity of Governance: Institutional Share in Responsibilities[24]**

| Issues | Concerned Agencies (in order of importance) | Result |
|---|---|---|
| Housing-provision of serviced plots for housing to accommodate growth | Delhi Development Authority (DDA)<br>Municipal Corporation of Delhi (MCD)<br>Department of Land Development (DoLD)<br>Ministry of Urban Development (MoUD)<br>Delhi Jal Board (DJB)<br>Delhi Vidyut Board (DVB)<br>New Delhi Municipal Corporation (NDMC) | Lack of houses leading to unauthorised colonies, growth of squatters, lack of infrastructure |
| Transportation | Ministry of Railways (MoR)<br>Central Public Works Department (CPWD)<br>Public Works Department (PWD)<br>Department of Transport (DoT)<br>Private sector | Lack of adequate mass transportation capacity and routes, resulting in growth of personalised vehicles with resultant problems of traffic congestion, air and noise pollution |
| Environmental pollution | Central Pollution Control Board (CPCB)<br>Delhi Pollution Control Board (DPCB)<br>Delhi Jal Board (DJB)<br>Municipal Corporation of Delhi (MCD)<br>New Delhi Municipal Corporation (NDMC)<br>Delhi Transport Corporation (DTC) | Land, water, air and noise pollution, environmental health related problems |
| Habitat Improvement for urban poor | New Delhi Municipal Corporation (NDMC)<br>Municipal Corporation of Delhi (MCD)<br>Delhi Development Authority (DDA)<br>Ministry of Urban Development (MoUD)<br>Department of Urban Development (DoUD) | Slum-up gradation or relocation do not get momentum |

[24] Virendra Prakash Committee Report on MCD, 2001, p. 10–36 and Mario Pinto, Metropolitan City Governance in India, Sage Publications, 2000, pp. 129 –161)

Presence of such strong powerful and parallel administrative statutory bodies such as DDA, MCD, GNCTD and NCPRB, created through the same act of Parliament, make the horizontal linkages difficult, and the vertical linkages confusing and conflicting. Politicisation of these institutions are in-built in their set-up such as governing bodies of DDA, DJB, NCPRB etc. Strangely, the two powerful bodies – the Delhi Legislative Assembly and the Municipal Corporation, – with their elected members and huge administrative set-ups exercise jurisdiction over more or less the same area, but function independent of each other.

### 2.4.1 Evolution of Governance Institutions in Delhi

#### 2.4.1.1 Pre-1957

Delhi has had a long tradition of local municipal governance since 1863, when the first Municipal Committee was set-up with powers to collect taxes on persons and property and provide municipal services. Earlier, members of civil services of Deputy Commissioner rank, Civil Surgeon, Deputy Superintendent of Police and other nominated non-officials constituted the municipal committee and all of them were appointed and nominated by the Governor. In 1884, half of the 24 committee members started coming through election, and by 1892, the number of elected representatives increased to 24 in the 36 member committee. Apart from undertaking a large number of construction projects such as laying railway lines, constructing railway stations and relocation of market. It made significant contribution in setting up the water supply system in 1892 and first sewer system in 1895 at Chandni Chowk, apart from development of civil lines with proper drainage, water supply and road construction in 1916. It also formulated first building bye-laws for the city in 1881 and set up the Delhi Joint Water and Sewage Board in 1926.

Notified Area Committees for local municipal administration in expanding parts of Delhi first came up in Mehrauli in 1901 in south Delhi, then in Shahdara in 1916, and in East Delhi and Red Fort areas in 1924 and 1925. The Notified Area Committee of Shahdara developed into a

**Milestones**

| | |
|---|---|
| 1805 | British took over administration of land, revenue and city administration and placed it under the Resident and Chief Commissioner |
| 1824 | Town Duties Committee, first improvement and development agency in Delhi, it planted ridge and developed cantonment |
| 1863 | First Municipal Committee |
| 1883 | District Board for rural areas (300 villages) |
| 1884 | Municipal Act changed the composition of committee and now it included minimum 6 elected members in 24 member committee |
| 1892 | The number of elected members rose to 24 in 36 member municipal committee |
| 1901 | Notified Area Committee for local development in Mehrauli |
| 1916 | Notified Area Committee in Shahdara |
| 1924 | Notified Area Committee in Red Fort |
| 1925 | New Delhi Municipal Council |
| 1926 | Delhi Joint Water and Sewage Board |
| 1943 | Shahadara Municipal Committee |
| 1950 | Delhi Road Transport Authority |
| 1951 | Delhi State Electricity Board |
| 1954 | South Delhi Municipal Committee |
| 1957 | All these civic agencies, Notified Area Committee and District Boards were merged with Municipal Corporation of Delhi |
| 1957 | MCD and NDMC for various Municipal services covering large rural areas, and later, slums and unauthorised colonies |
| 1957 | DDA for planning and managing land and services to some areas, later many of them transferred to MCD) |
| 1977 | DUAC for urban aesthetics |
| 1985 | NCR for regional planning |

Municipal Committee in 1943. Other institutions like the Delhi Road Transport Authority came up in 1950 and the Delhi State Electricity Board in 1951. All these institutions were later merged with Municipal Corporation of Delhi in 1957.

#### 2.4.1.2 Post 1957

Since Independence Delhi's urban growth and city management has largely been determined or influenced by the approach, policies and strategies of the Ministry of Urban Development and Poverty Alleviation and the Ministry of Home Affairs. Delhi has been an experimentation ground for many kinds of local institutions and political set-ups without having any autonomy of their own.

After Independence, Delhi was made a self-governing Part 'C' state with a Legislative Assembly of 48 members, headed by a Chief Commissioner. But it had no powers to make laws with respect to public order, land, police, municipal corporation and other local authorities, and services. In 1956 following the recommendations of the States Reorganisation Committee, Delhi was declared a union territory, directly under the control of the President and Parliament. All legislative and important administrative powers for city development were given to the Lieutenant Governor.

Delhi witnessed a 240 per cent growth in population between 1947 and 1951 due to migration from Pakistan. The unplanned growth of the Delhi necessitated formation of Delhi Development Authority under the Lieutenant Governor in 1957 through a Parliament Act for planned development and land/shelter management. DDA was given key responsibility for developing and implementing master plan of the city. The Municipal Corporation of Delhi (MCD) was set-up under the DMC Act, 1957, and the New Delhi Municipal Corporation (NDMC) was constituted under NDMC Act, 1957 to provide urban services in their respective areas. The Delhi Cantonment Board continued to provide basic services to the military cantonment area. Under the DMC Act, 1957, the powers of control and supervision are vested in the Union Government, which are to be exercised through Lt. Governor. In 1957 the Delhi Urban Area (DUA) was demarcated to draw a geographical boundary for planning, which contained NDMC, MCD and Delhi Cantonment Board, and, of course, DDA. Among these agencies, coverage of MCD in terms of area (94.2% of 1,468 sq kms.) and population (95.8% of 13 mn.) is much larger than the other three agencies.

There was no legislative body on Delhi from 1956 to 1966 to exercise any control over MCD. The need for local administration and a political set-up with local representation resulted into formation of the Metropolitan Council with four executive councilors and 56 elected members in 1966, the first of its type in the country. The Metropolitan Council was not given any legislative power or control over MCD, but had authority to discuss and make recommendations with respect to legislation, plans, development schemes and budget proposals. Most of the legislative powers, however, remained with the Governor, appointed by the Union Government. The Metropolitan Council was dissolved by the central government in 1980, but was revived in 1983, and finally dissolved in 1990 when Delhi Assembly was revived after having being dissolved in 1956.

In the meanwhile, in 1977, another centrally administered body, the Delhi Arts Commission was set up under the aegis of Ministry of Urban Development to ensure the aesthetics of urban planning and its development through supervision and consultation.

With the city expanding beyond the spatial limit of DUA, it became necessary to formulate regional and zonal master plans to ensure convergence and harmony in Delhi's master plan with the plans of neighbouring towns like Ghaziabad, Faridabad, Panipat, Sonipat and Gurgaon. National Capital Region Planning Board, covering a total area of 13,412 sq km and having representation from all neighbouring states, was constituted under NCR Act, 1985 to facilitate, formulate and implement Regional and Zonal plans for entire National Capital Region (NCR) in consultation with the neighbouring state governments. Provision has been made for the creation of a separate fund under the control of central government into which will be credited with the contributions from the Centre as well as from states.

In 1987 the Sarkaria (later Balakrishnan) Committee was set up by the Government of India to examine the issues of increasing population, crowded settlements and multiplicity of authorities with overlapping functions in Delhi. The committee in its report (in Dec.1989) recommended a Legislative Assembly and council of ministers, acting the first legislative assembly of 1952–56. Interestingly, its recommendations emphasised on keeping Delhi as a Union Territory in order to ensure that Parliament has concurrent and overriding powers to make laws for Delhi on all matters, including those relating to the state list.[25] While its recommendation to create a legislative assembly was accepted by the central government, the local political forces did not accept its recommendation for abolishing the MCD to form more municipal bodies.

On the recommendations of the committee in 1989, the Metropolitan Council was dissolved in 1990, and the Government of National Capital Territory of Delhi (GNCTD) Act, 1992 was passed. The Legislative Assembly along with Council of Ministers was created to manage the administrative affairs of Delhi. The committee restricted its power to formulate legislation on the reserved subjects such as law and order, police, and land. Road and transport, electricity, water and sewerage were taken away from the list of statutory and obligatory functions of MCD and were placed under newly constituted Delhi State Assembly. DMC Act 1957, was subjected to extensive amendments through Act 67 of 1993. (MCD, P.59). The Delhi Vidyut Board was constituted in 1996 and the Delhi Jal Board for administering water supply and sewerage was set up in 1998. However, the work relating to internal sewerage stayed with MCD. The cooperation with its left over functions continued to be under the supervision and control of central government GNTCD was given the role of overseeing the functioning of MCD. Although The overall power of control, remains with the central government, may delegate any of its powers to the state government.

Though the Delhi Government (GNCTD) releases large quantum of planned (nearly Rs 8 bn) and non-planned budget, (Rs 6 bn in 2000–01) from the Urban Development department to the MCD alone, it does not get credible and reliable information on progress of planned expenditure and status of physical implementation on ground.[26]

Interestingly, the Commissioner of MCD has been given power to discharge her/his duties but under the general superintendence of the central government, not of the elected council of the municipality. It is not surprising why the Commissioner of MCD in operational term is supposedly more powerful than the Mayor and councilors and she/he will have to implement the order of the central government in case of conflict with the council.

In the absence of any strong legislative body, Delhi's citizens have been systematically denied their right to participate in local urban governance, as since independence the city has been controlled through policies, legislations and institutions of the Union Government of India. While Delhi's citizens elect their municipal councilors and MLAs and seek their help in addressing their needs of land security and services, all important decisions regarding city planning and management of land and municipal services continue to be taken by the officials and legislative heads appointed by the central government. The legislative assembly, as discussed, too has no control over DDA – the largest land owning (i.e more than 72%) agency responsible for urban development.

Fragmentation of authorities and multiplicity of power centres limit the roles of councilors and MLAs, in addressing varied needs that are interconnected, but separated administratively. Despite being elected representatives MLAs and councilors can not address the needs of land tenure security of the vulnerable sections of the population.

The town planning department of the MCD still holds the key to the entire development of Delhi, having prime significance in the interpretation and correct implementation of the Master Plans and Land Use Regulation, as well as in the field of urban planning. It definitely plays a more important role in planning and implementation of master plan than the state

[25] Report of the Committee to Review the Structure and Working of Municipal Corporation of Delhi. 2001, p.28

[26] Virendra Prakash Committee Report on MCD, 2001, p. 49.

government. The area of Delhi Municipal Corporation has increased significantly from 240.8 sq kms in 1961 to 436 sq km in 1981–91 and almost 1397.29 sq km by 2001. Coverage of its operation is as big as GNTCD.

Strangely, the two powerful bodies like-the Delhi Legislative Assembly and Municipal Corporation, with their elected members and huge administrative set-ups exercise jurisdiction over more or less the same area, but function independent of each other, without any convergence and team work. This places Delhi in a unique legislative-administrative position, different from all other states as well as union territories. "It is indeed a matter of grave concern that the municipal body is often seen to be acting as if it was still the sole elected body answerable only to the union government and subordinate in legislative authority only to the Parliament of India. It seems particularly predisposed to adopting postures of confrontation with GNCTD on the precarious presumption that it is a coordinate body (not subordinate body, emphasis added) to GNTCD, because both of them are the creations of Parliament enactments" (Virendra Prakash Committee Report on MCD, 2001, p. 64)

It is important to note that the Sarkaria (later Balakrishnan) Committee was to find solutions for multiplicity of authorities with overlapping responsibilities. Despite implementation of their recommendations, currently 118 line departments are responsible for implementing the city's master plan. The lack of coordination among them has been one of the most talked about features of the city governance. Overlap of roles as well as irrational division of municipal functioning between MCD, GNCTD and DDA are writ large in their operation, especially when it comes to land and infrastructure development. Complex institutional arrangements and sectoral perspective to supply driven planning and service delivery have amplified the human rights' breaches.

## 2.5 Water Supply in Delhi: Issues and Initiatives

### 2.5.1 Water Sources: Conflict on Surface Water and Depletion of Groundwater

Delhi gets over 86 per cent of its water supply from surface water through the Yamuna river, whose flow is largely diverted upstream in Haryana and Punjab through canals for irrigation purposes. Despite interstate agreements and regular meetings of the Upper Yamuna River Board, there are regular conflicts, regarding the sharing of water allocated to each state and particularly to Delhi. Other sources of water supply to Delhi, through different interstate arrangements, include the Himalayan rivers and sub-surface sources like Ranney wells and tubewells.

**Table 7: Sources of Water Supply for Delhi[27]**

| | Source | Quantity |
|---|---|---|
| Surface Water | Upper Yamuna River Board | 1835 TCMD (404 mgd) |
| | Bhakra-Beas Management Board | 1213 TCMD (267 mgd) |
| | Ganga River | 1223 TCMD (269 mgd) |
| Groundwater | Yamuna river Ranney wells | 101 TCMD (22 mgd) |
| | Tubewells across Delhi | 187 TMCD (41 mgd) |

Groundwater represents around 1 per cent of Delhi's water resources officially, even though pumping of the aquifer by domestic consumers and industries remain a widespread strategy to cope with unreliable supply in Delhi. Owing to escalating population without a commensurate increase in the availability of raw water, the groundwater in Delhi has been over exploited. This has disturbed the hydrological balance leading to decline in the

[27] Source: Delhi Jal Board

productivity of wells, increasing pumping costs and more energy requirement. Compared to a level of 30-40 feet in 1950s, the water table has dropped to 350 feet at certain places.[28] It is said to be falling at a rate of 10 feet per year. Groundwater levels have depleted by 2-6 m in Alipur and Kanjhwla blocks, 10 m in the Najafgarh block, and about 20 m in the Mehrauli block. The quality of underground water is also deteriorating and has been found to be unfit for human consumption.

### 2.5.2 Water Supply – Demand Supply Gap and Iniquitous Distribution

With the population of Delhi increasing from 0.4 mn in 1911 to 13.7 mn in 2001, there is an ever-increasing pressure on the water resources. Improvements in living standards and access to sanitation facilities are also leading to an increase in per capita demand levels. Commercial and industrial demands put together have also grown from 567 kilolitres in 1992–93 to 1478 kilolitres in 1996–97.

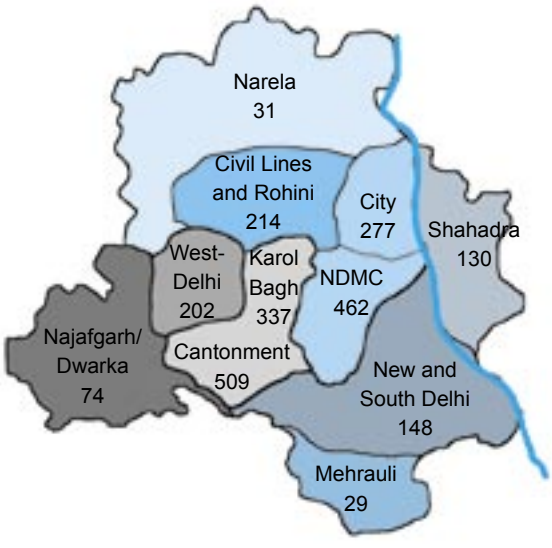
The treatment capacities of Delhi Jal Board (DJB) have increased from 42 mgd[29] in 1951 to the current production level of 631 mgd.[30] Despite this, the average current shortfall is about 200 mgd (as calculated using the DJB's supply norms and average losses estimated at 15 %). However, the percentage of UFW (Unaccounted-for-Water) calculated from the difference between water produced and pumped is 1082 mld, as high as 35 to 40 per cent, reflecting problems in management of available resources.[31]

According to a World Bank study, New Delhi along with Chennai are ranked the worst among 27 mega cities in Asia in terms of water availability.[32] Not only is there a shortage of water but also uneven distribution of the available water resources.

A document' Delhi – A Fact File published by the National Capital Region Planning Board (1999) presents the following key findings:

- The level of supply is the highest in the cantonment area at 509 lpcd, almost 18 times the level of supply in the Mehrauli area.

**Water Zones in Delhi[33]**




**Unequal Distribution of Water in Delhi[34]**

In a classification on the nature of water supply, the city is classified into five zones.[35]

Zone 1- Treated piped water available 24 hours of the day;
Zone 2 - Rationed water available for a total of six hours per day;
Zone 3 - As water supply is inadequate, tubewell water is mixed with the Municipal supply and supply for few hours;
Zone 4 - Areas depending totally on the tubewell water, that is not tested, in addition to handpumps; and,
Zone 5 - There is no organised water supply.

[28] Based on studies by Centre for Science and Environment, New Delhi

[29] Million Gallons per Day

[30] Delhi Jal Board, 2001

[31] GHK International Ltd 2000

[32] www.southasia.oneworld. Net/article/view/822121/1/

[33] "Delhi-1999, Fact-Sheet" published by NCR Planning Board

[34] Joël Ruet – VS Saravanan – Marie-Hélène Zérah, "The water & sanitation scenario in Indian Metropolitan Cities: Resources and management in Delhi, Calcutta, Chennai, Mumbai", CSH Occasional Paper No. 6, 2002

[35] Susheela, A., Madhu Bhatnagar and Arbind Kumar. 1996. Status of Drinking Water in the Mega City - Delhi. In the proceedings of the 22nd WEDC Conference, New Delhi. India. Pg. 356.

- Narela and Mehrauli, the peripheral areas of the city have very low levels of water supply, at 31 and 29 lpcd respectively.
- The level of supply in South Delhi is low (148 lpcd) considering the high demand from a largely medium/high-income residential area.

Different segments of the population demand different amounts of water. Based on this assumption, standards/norms have been established for provision of water to different types of settlements. While the standard for provision of water to planned colonies is 225 lpcd, the same for resettlement colonies and urban villages is 155 lpcd and for JJ clusters it is abysmally low at 50 lpcd.

The supply to all segments of the city's population is inadequate, whether it is slums or high-income residential areas, whether it is residential or industrial areas. Water supply is intermittent in most of the zones of the municipal corporation and water pressure is low. As a result, households have to invest in compensatory strategies such as private boreholes or

**Table 8: Water Supply – Demand Supply gaps for Different Settlements of Delhi[36]**

| Settlement Type | Population (in million) | Demand in mld | Supply in mld | Shortfall/excess |
|---|---|---|---|---|
| JJ clusters, Designated Slums & unauthorised colonies (I) | 1.396 | 59.33 | No piped supply | -100% |
| JJ clusters, Designated Slums & unauthorised colonies (I) | 4.080 | 173.40 | 20.43 | -88% |
| Planned Areas (HC) (MCD) | 7.550 | 1698.75 | 990 | -42% |

handpumps, electric motors, and water filters. The cost of these strategies is as high as 6.5 times the amount paid to the Delhi Jal Board.

### 2.5.3 Institution for Water Supply: Capacity and Accountability

The Delhi Jal Board (DJB) is responsible for production of drinking water in Delhi and its distribution in the areas under the control of the Municipal Corporation of Delhi (MCD). It supplies water in bulk to New Delhi Municipal Corporation (NDMC) and Delhi Cantonment Board (DCB) for further distribution in their respective areas. The installed capacity of water treatment plants is 631 mgd and by optimisation through Tubewells, Ranney wells, etc, approximately 650 mgd potable water is being supplied by Delhi Jal Board (DJB).

Despite progress and development of new water sources and water treatment facilities, the official figure of 250 lpcd provided by the Delhi Jal Board (DJB) does not reflect the reality of service provision where households have to bear high coping costs for a better supply. The various steps taken by Delhi Jal Board (DJB) in the recent past to improve services include:

- 140 mgd Sonia Vihar water treatment plant (WTP) slated for completion in 2004 (although recent newspapers reports have indicated that work is still in progress)
- Commissioning of Nangloi Water Treatment Plant (WTP) to its full installed capacity of 40 mgd by end of 2004
- Future water treatment plants at Dwarka and Okhla for the present tailend users
- Recycling wastewater of existing water treatment plants to add 46 mgd
- Additional high yield tubewells in flood plains of Yamuna
- To achieve the objective of equitable supply of water DJB is augmenting/constructing underground reservoirs (UGRs), booster pumping stations and laying transmission distribution network.

The current initiatives are mainly aimed at infrastructure expansion and completely ignore institutional capacity building, creating conducive policy environment and mechanisms to

[36] Source: Status report for Delhi 21 – Delhi Urban Environment and Infrastructure Improvement project, 2001

promote and ensure accountability to the clients, factors that are important for ensuring effective, equitable and adequate water supply.

### 2.5.4 Privatisation of Water

In April 2002, Government of India announced a new water policy based on privatisation. This policy was largely influenced by and suited to the World Bank recipes for the water sector. On June 21, 2002, a privatised water treatment plant was inaugurated at Sonia Vihar in Delhi. The plant, with a capacity for 140 mgd of water, is being designed, built and operated at the cost of 1.8 bn rupees by Degremont, the biggest water multinational company of the world. Along with this, a Delhi Water Regulatory Commission has been set up to explore the possibility of engaging private companies in building and operating water supply in Delhi. While the Chief Minister issued a press statement "We do not intend to privatise the water sector. Water is a basic necessity of every person and it cannot be handed over to the private sector. They (private company) will build operate and transfer the operation to DJB"[37], people of the city ask at what cost and whose expense will the multinational companies build, operate and transfer the assets to the same agencies that have failed to operate in the past!

Recently, DJB has formulated a document for 24x7 water supply system through public-private partnership, which will be tested in five pilot areas of Delhi. A large-scale research project is underway by the World Bank – UNDP Water and Sanitation Programme (WSP) for developing a long-term reform process for building and operating the water supply system in Delhi. From December 2004 onwards the residents of Delhi will witness a sharp hike in water tariffs. On 10 November 2004, DJB announced an approval 'in principle' of the hike in tariff based on fixed and consumptive charges. Newspaper reports suggest that the tariff hike will affect the middle-income groups the most with the average monthly water bills shooting upto to Rs 155 from Rs 32. While domestic bills will rise by 2.5 to 10 times, the increase in commercial and industrial bills will be even sharper.

Mr Mohan, CEO, DJB rationalises the increase in tariff saying that while it costs DJB Rs 6.97 to treat a kilolitre of water while it is supplied at Rs 0.53 per kilolitre. He mentioned that DJB is targeting to recover the entire cost of Rs 6 bn of the citys' water bill from users through energy audits, controlling leakage and recycling water. The DJBs promise of giving the poor 6,000 liters per month, is as vague as any government's promise. NGOs like the Centre for Science and Environment (CSE) agree that water tariff revision is necessary, but with rationalisation of slabs. With 75 per cent of municipal connections unmetered, on what basis would the DJB revise rates? "Why should the slab begin at 50,000 litres for commercial users in Delhi?

Many feel that privatisation of water is a clear example of how private public partnerships in water amount to private gain and public cost. The following questions loom large with regard to privatised water supply system – who will own, who will operate, who will pay and how much, who decides, on what basis, how will people participate and what will satisfy private greed and how much will it meet people's need?

### 2.5.5 Challenges for Water and Sanitation Programming in Informal Settlements

For informal settlements or slums, apart from, is a simplified, comprehensive, coherent and singular policy, there must be one coordinating authority that is accountable for all urban management. What will make the central government reconsider the plan for dividing and decentralising the much maligned (at least in reports of all commissions set up to reorganise MCD) and one of the biggest municipalities of the world? Will the constitutional provision of functional autonomy of urban local body be implemented in Delhi?

## 2.6 Sanitation Services in Delhi: Sewerage, Drainage and Solid Waste Management

With the population rising at an alarming rate, the amount of wastewater generated by domestic and industrial activities is increasing. There is growing lag between wastewater

[37] www.irc.nl/page/8088

discharges and treatment capacities. Further, due to inadequate infrastructure for wastewater collection and other operational problems, even the current capacities of Sewage Treatment Plants (STPs) are underutilised. Unabated discharge of treated and untreated wastewater from different sources is responsible for excessive deterioration of surface water quality.

The Delhi Jal Board is responsible for treatment and disposal of wastewater through a network of about 5600 kms. of internal, peripheral and trunk-sewers. The capacity of sewage treatment plants has been increased from 376.4 mgd to 402.4 mgd during the year 2000–01. Out of the 17 sewage treatment plants under construction, the work of 12 has been completed and the work of remaining five STPs is under progress. Despite these developments only 55 per cent of Delhi's population is served by sewerage system and sewage treatment facilities are provided for only a small proportion of the sewage generated.

Delhi alone contributes around 3,296 mld (million litres per day) of sewage through drains out falling in the Yamuna. This is more than that of all the Class II cities of India put together. The low perennial flow in the Yamuna and the huge quantity of waste it receives have given it the dubious distinction of being one of the most polluted rivers of the country. The total wastewater flowing into the 19 drains amounts to 3296 mld (million liters per day). Out of this 1100 mld is treated at different STPs. In addition, 700 mld is treated at the Okhla STP and directly discharged into the Agra Canal.

Solid waste collection and disposal is the responsibility of STP Municipal Corporation of Delhi, New Delhi Municipal Council and Delhi Cantonment Board in their respective areas. In 1996, the amount of waste generated was estimated at 8000 tonnes per day, out of which 30 per cent remained uncollected. The main sources of waste are households (around 45 %), markets and hospitals (around 26 %) and industries (around 13 %). Over the years, solid waste has been dumped at 12 large landfill sites. At present, there are three landfill sites – Bhalaswa, Gazipur, and Okhla, all of which are located at the city's periphery. The landfill sites are neither prepared before being used for disposal/dumping of waste nor is an environment impact assessment carried out while selecting them, resulting in irreparable damage to the land and water resources in the area. In the last few years, in order to improve its collection system, the Municipal Corporation of Delhi has been taking proactive steps to involve nongovernmental organisations to liaise between the Corporation and the large informal sector[38] involved in door to door collection of garbage.

## 2.7 Governance Institutions Impacting Water, Sanitation and Informal Settlements

As water, sanitation and environmental health are issues closely linked at local level, operational mechanisms are required to develop infrastructure and deliver these services necessitating close coordination among different agencies.

In many ways, the situation in Delhi is quite complex. Being the National Capital there is often confrontation between the State's Legislature and the central government that tries to keep a control over the development of the Capital. The Delhi Jal Board (DJB) was constituted on 2nd April 1998 by an Act that provides extended power and a larger autonomy to the Board. The DJB has gained some more autonomy and has the mandate to decide on the introduction of private sector participation and has more freedom to decide its tariff policy. In reality, however, the DJB, remains in the government sphere and cannot take major decisions such as tariff restructuring without the approval of the State assembly.

The Delhi Development Authority (DDA) is in charge of preparing the Delhi Master Plan but it also acts as an implementing agency and is, therefore, responsible for the development of new housing projects in Delhi. The Dwarka housing project developed by DDA was to accommodate 1.4 mn people, however, there is almost no water and as a consequence a very small number of people have shifted there. This case indicates a lack of coordination between DDA and DJB. Apart from DDA, the National Capital Region Planning Board (NCRPB) is responsible for developing a comprehensive approach (and a master plan) for the overall

[38] Rag pickers

National Capital Region (that includes neighbouring towns) and future potential growth towns in Rajasthan, Uttar Pradesh and Haryana. The role of the NCRPB needs to be well co-ordinated with the Delhi administration as it aims to reduce the influx of migrants to Delhi by providing adequate infrastructure and incentives to neighbouring towns. However, the recent figures of in-migration into Delhi clearly reveal that the Board has not managed to address issues of the region. Registration of private boreholes has been made compulsory by the Central Groundwater Authority (CGWA) which is under the Ministry of Water Resources and is another actor in the water sector. The Delhi Pollution Control Board (DPCB) under the Ministry of Environment and Forest also has a role to play as far as controlling the wastewater disposal from industries is concerned. The Supreme Court has directed also the Delhi Jal Board to build a wastewater treatment plant to reduce the pollution level in the Yamuna. This is an example of the new role that the highest judiciary authority plays in a sector like water supply.( As can be seen from the brief repeated description of some of the major institutional actors in the water supply and sanitation sector, the situation in Delhi is complex and the lack of coordination (that is quite evident between the DJB and the DDA for instance) leads to situations where the judiciary needs to intervene.)

### 2.6.1 Governance of Rural Areas

After the abolition of Legislative Assembly in 1956, the central government placed the entire rural area of Delhi under MCD in 1957. This unique arrangement was also made to bring all notified areas, district boards and the Shahdara Municipality under one umbrella to address the issue of multiplicity of authority. Both DDA and MCD undermined the authority of village panchayat, but the rural areas continued to be governed under the Panchayati Raj Act, 1954 and the Delhi Land Reforms Act 1954. This created a fertile ground for conflict and confusions, especially when the unplanned growth in rural areas was on its peak in eighties and nineties due to an unprecedented growth of population from 0.87 per cent in 1971–81 to 7.4 per cent in 1981–91[39]. The rural areas thus had a combination of rural governance under some Acts (Panchayati Raj, 1954 and Delhi Land Reforms Act) and urban Governance under other Acts (MCD, DDA, GNCTD). Though villagers had a surfeit of governance and institutions, they lacked governance, because of in-built systemic contradictions and confusions of urban and rural governance institutions.

### 2.6.2 Slums and Resettlement Colonies

The slums–JJ clusters, resettlement colonies, and notified slum like old Delhi – are directly administered by the MCD. The Lt. Governor of Delhi, a centrally appointed nominee, is the only competent authority to notify any area as a slum, if it fits the definition given in the Central Slum Areas Act. The responsibility of municipal services to the existing JJ cluster as well as sites relocated by DDA is with the MCD. Within the Municipal Corporation of Delhi, the Slum Wing Department is in charge of squatter settlements, notified slum areas as well as pavement dwellers. This department is in charge of defining policies for this type of habitat even though services, when sanctioned, are to be supplied by the DJB.

## 2.8 Conclusion

Two natural features of the city probably made it a favourite place for various rulers, the Ridge and River Yamuna. The various cities of Delhi through the ages have been craddled by these two features. Neither of them have been transgressed. Today, when their physical protective features are no longer of importance they are destroyed with impunity.

Delhi has been a unique city in the past and it continues to be distinctive and matchless in many ways in present times as well, although for entirely different reasons. Historically, the city has been foremost in political importance with successive dynasties choosing it as their seat of power, including the Slave Dynasty, *Khiljis, Tughlaqs, Sayyads, Lodis, Mughals* and the British.

[39] Kundu, A., Schenk, H., and Dash, B. P., 2002. Changing role of state in urban governance, provision of basic amenities to poor in the context of unplanned growth in metropolitan peripheries of Delhi and Hanoi. New Delhi: Institute for Human Development

At present, Delhi with a population of 13.78 mn[40] is the third largest, but the fastest growing and most densely populated city in India. Migration has roughly averaged 1.3 times the natural growth in Delhi. The pattern of the city's growth during 1980s and 1990s indicates that the rural hinterland of Delhi is increasingly absorbing a large proportion of migrants. The dynamics of growth in Delhi have unleashed a strong process of sub-urbanisation in the hinterland.

As Delhi swells due to large influx of migrants from smaller cities, towns and rural areas with unmatched provision of housing and basic amenities, 'informal settlements' increase in numbers, sizes and densities. As per various estimates in 1999, 75[41] to 78[42] per cent of the city's population was living in marginal/sub-standard settlements. During the 1990s, the largest concentrations of slums were in the built-up areas of North, South (I), and West (II) Delhi, as well as in the older parts of the city, namely, Civil Lines and Karol Bagh. However, in the last five years, there has been large-scale relocation of "informal settlements" from various parts of the city to the periphery which has resulted in a concentration of slum population in the peripheral wards.

Delhi has four types of informal settlements, namely, *Jhuggi Jhompri* clusters, unauthorised colonies, resettlement colonies and urban villages. *Jhuggi Jhompri* clusters are encroachments on government land, which do not have any entitlements to civic amenities. There have however, been instances of regularising these clusters and providing services and amenities on humanitarian grounds. Unauthorised colonies are not slums, squatters or encroachments, but are colonies where the urban poor have bought small piece of individual land to build houses on farmlands of urbanising villages. These settlements are also not entitled to basic amenities including piped water, sewerage, solid waste removal facilities and drainage. The 52 resettlement colonies of Delhi tell the story of demolition, relocation and a systematic process of marginalisation of the urban poor whereby they have been shifted from the city to its periphery. Once the farmland around a village is acquired by the Delhi Development Authority (DDA), the village is declared an urban village. While officially an urban village is entitled to all civic amenities and services the reality is very different as a result of which urban villages have joined ranks of slums in the city.

Delhi can safely be called an "experimental graveyard" for many legislative and administrative models or approaches applied to the city to improve its governance. In Delhi the control over land, city planning and service provisions, remains with the central government. The direct control and interference of the central government in the city's administration denies the right of citizens to participate in the city governance and renders the constitutional belief of decentralised 'local self governance' expressed through 74$^{th}$ constitutional amendment in 1994 meaningless.

While the norms for provision of basic amenities including water supply, sanitation, solid waste management and electricity are different for formal and informal housing, what is more lamentable is the fact that the actual level of provision to informal communities is far below any acceptable standards and norms.

The main sources of water supply to Delhi are surface water from the River Yamuna and other Himalayan rivers as well as sub-surface water from Ranney wells and tubewells. Despite various interstate agreements and regular meetings, there are regular conflicts, regarding the sharing of water allocated resulting in uncertainties of water supply especially during summers. Owing to escalating population without a commensurate increase in the availability of raw water, groundwater in Delhi has been over exploited.

Delhi Jal Board (DJB) is responsible for production of drinking water in Delhi and its distribution in the areas under the control of the Municipal Corporation of Delhi (MCD). It also supplies water to New Delhi Municipal Corporation (NDMC) and Delhi Cantonment Board

[40] Census 2001

[41] Delhi Urban Environment and Infrastructure Improvement Project (DUEIIP)

[42] MCD

(DCB). Ever-increasing population, improvements in living standards and access to sanitation facilities are creating tremendous pressure on water resources. The average current shortfall is about 200 mgd (as calculated using the DJB's supply norms and average losses estimated at 15 %). Different segments of the population demand different amounts of water. The supply to all segments of the city's population has been inadequate, whether it is slums or high-income residential areas, whether it is residential or industrial areas.

The DJB has initiated a development of new water sources and water treatment facilities. However, other factors that are important for ensuring effective, equitable and adequate water supply including institutional capacity building, creating conducive policy environment and mechanisms to promote and ensure client accountability have remain untouched.

With the Government of India announcing a new water policy based on privatisation (April 2002) there have been cascading effects of the policy in Delhi ; a privatised Water Treatment Plant (WTP) was inaugurated at Sonia Vihar barely a month later, the Delhi Water Regulatory Commission was set up to explore the possibility of engaging private companies in building and operating water supply in Delhi, and a study is underway for developing a long-term reform process for building and operating water supply system in Delhi (World Bank – UNDP Water and Sanitation Programme).

Only 55 per cent of Delhi's population is served by sewerage system and sewage treatment facilities are provided for only a small proportion of the sewage generated. Delhi Jal Board is responsible for treatment and disposal of wastewater. There is growing lag between wastewater discharges and treatment capacities. Further, due to inadequate infrastructure for wastewater collection and other operational problems, even the current capacities of Sewage Treatment Plants (STPs) are underutilised. Unabated discharge of treated and untreated wastewater from different sources is responsible for excessive deterioration of surface water quality.

Solid waste collection and disposal is the responsibility of local bodies including Municipal Corporation of Delhi, New Delhi Municipal Council and Delhi Cantonment Board in their respective areas. In 1996, the amount of waste generated was estimated at 8000 tonnes per day, out of which 30 per cent remained uncollected. In the recent years, the Municipal Corporation of Delhi has been taking proactive steps to involve non governmental organisations to organise door to door collection of garbage.

CHAPTER 3

# Micro Settings of the Study: Wards of the Urban Poor

## 3.1 The Study: Purpose, Approach and Methodology

### 3.1.1 Objectives of the Study

The overall objective of this study is to explore the scope and rationale for programmatic interventions by WaterAid India in Delhi. The intervention is required to develop an approach as well as a policy framework for adequate water and sanitation services in urban and peri-urban areas of Delhi.

The current study aims to analyse the nature and extent of gaps in coverage and quality of basic amenities and services (water and sanitation) for urban poor communities in Delhi. Through an in-depth study of eight informal settlements including JJ clusters[1], unauthorised colonies, resettlement colonies and urban villages located in two wards[2] of Delhi, namely, Bhalaswa and Badli the study aims to identify issues related to access and quality of basic amenities and facilities, as well as environmental risks and hazards resulting from poor environmental sanitation.

Apart from identifying factors that inhibit the access to environmental services, the study also aims to identify and document the response of various stakeholders (government, civil society, NGOs and the community) towards ameliorating the problems encountered by these communities. Discussions with different stakeholders including community, people's representatives (ward councilors), municipal authorities and service providers (Delhi Jal Board) would be aimed at exploring possible collaborative action.

The specific objectives of this study are as follows:

- Identify the status of provision of water and sanitation services vis-à-vis the policies and norms for maintaining a decent quality of life in informal settlements of Delhi;
- Identify issues related to access and quality of basic services and facilities, disaggregated by gender, age, social structure, etc, in the communities;
- Record the response from various stakeholders (Government, NGOs, CBOs, private sector and communities) in ensuring better access to, and quality of basic amenities and facilities;
- Assess the willingness and ability of the local communities to participate in the development process of ensuring environmental sanitation for their communities; and
- Plan possible interventions for improving the existing environmental sanitation situation in 'informal settlements' of Delhi through consultations with local government officials, elected representatives, officials of service providing agencies, NGO functionaries and local community leaders/representatives.

### 3.1.2 Location and Coverage of the Study

#### 3.1.2.1 Coverage of Peripheral Wards: Reasons & Issues

The 74th Constitutional Amendment Act passed in 1993 has opened the doors for decentralised management systems and people's participation through Urban Local Bodies

[1] Jhuggi Jhompri Clusters

[2] Electoral wards

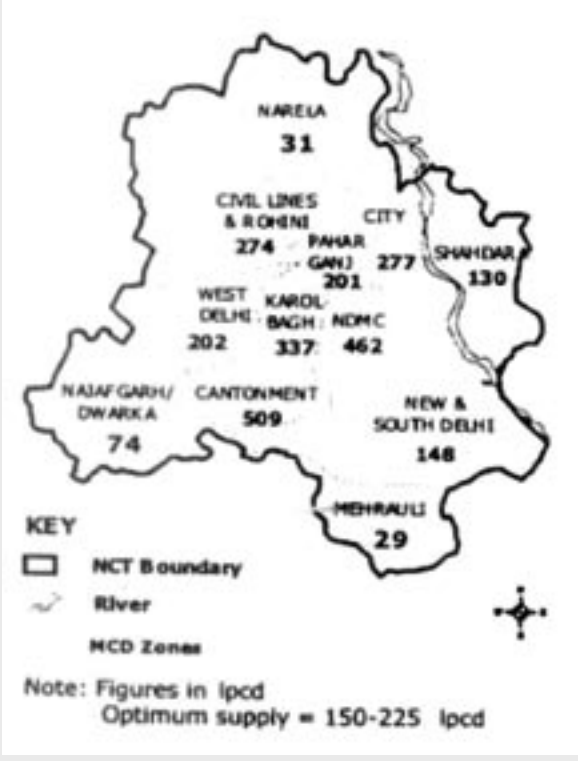
(ULBs). The ULBs have become empowered local institutions with elected representatives responsible for identifying, formulating, implementing and monitoring local developmental and welfare programmes. The ward was envisaged to be the unit of decentralised governance where all local developmental programmes would be formulated. In this background, the current study has also chosen "ward" as one of the levels of ascertaining and analysing issues and problems related to provision, quality, operation and management as well as availability of grievance redressal mechanisms for basic services and amenities (water and sanitation).

Of all the wards in Delhi, those located on the periphery of the city are the poorest in terms of access to resources and due to concentration of 'informal settlements'. These wards also carry the burden of the city's pollution agents; in recent years many polluting industrial units have been shifted from the city's centre to the peripheral wards and the garbage generated by the entire city finds its way to the Sanitary Landfill Sites (SLFs) located in these wards.

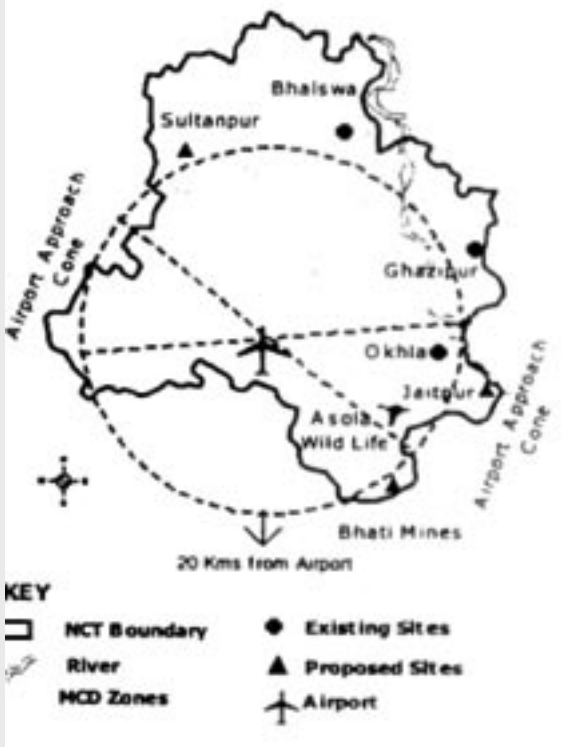
An international fact finding team, under the auspices of the Habitat International Coalition's Housing and Land Rights Network (HLRN) studied twelve resettlement sites[3] throughout Delhi in March 2001. The study brought to light the planned process of spatial exclusion of the poor in Delhi. The study revealed that all resettlements since 1976 have resulted in poor communities that were earlier residing in the city centre being pushed out to remote peripheral areas which had no access, basic amenities/facilities or livelihood opportunities. The major resettlement sites in North West Delhi are Narela and Bhalaswa and the current research covers two electoral wards within these geographical areas, namely, Badli and Bhalaswa.

The wards located in the periphery of the city fare much worse than other wards with respect to access to basic amenities and facilities including water and sanitation. An analysis of the water supply in various wards of Delhi reveals iniquitous distribution. While majority of the

**Ward Wise Water Supply**




**Location of Sanitary Landfill Sites**




[3] Bakharwala, Bhalaswa, Hastsal, Jahangirpuri, Maddanpur Khader, Molarbund, Nehru Place Papankala - Sector 1, Papankala - Sector 16A (Kakrola), Poothkala, Sundernagri and Trilokpuri.

wards located in the city centre receive water supply at rates much above the stipulated standards/norms, the wards located on the city periphery have very low supply rates — 31 lpcd in Narela, 29 lpcd in Mehrauli and 74 in Najafgarh[4]. Only 55 per cent of Delhi's population is served by a sewerage system; the figure is much lower for the peripheral wards.

The existing Sanitary Landfill Sites (SLFs) in which garbage generated by the entire city is dumped are located in the peripheral wards. The city has three SLFs, namely, Bhalaswa Sanitary landfill site located in North West Delhi, Gazipur SLF in East Delhi (Trans-Yamuna) and Okhla SLF in South Eastern part of Delhi. With all these SLFs fast exhausting their capacities and with no alternative means of garbage management, three new SLFs are proposed, namely, Sultanpur, Jaitpur and Bhatti Mines, all of which again are located in the peripheral wards of the city.

### 3.1.3 Research Process and Tools

In view of the magnitude of issues facing urban poor communities, it is imperative to involve them in identifying and understanding issues related to access and quality of basic amenities and facilities, as well as environmental risks and hazards resulting from poor environmental sanitation. A participatory approach was considered vital for providing an opportunity for communities to present, share and analyse their perceptions, experiences and knowledge and to facilitate a realistic assessment of issues, risks and hazards confronting them. The research is based on active participation of all sections of the community including women, children, youth, aged, and community based organisations through participatory research techniques and processes.

The research process adopted for the study of 'informal settlements' of Delhi had the following steps:

- Familiarisation;
- Community Profiling and;
- Community Based Risk Assessment – Household Survey and Participatory Research .

#### 3.1.3.1 Familiarisation Process

The familiarisation process included getting acquainted with the settlement and the community. It included identifying the boundaries of the settlement and understanding its environs. In this phase, the research team introduced themselves to community leaders; shared the aims and objectives of the research; provided details on the research process that would be unfolding in the community; and also sought their help and cooperation in undertaking the research. This process was very effective in building a positive rapport with the community. The percolation of information about the research to all community members went a long way in ensuring their readiness to be proactively associated in the participatory research processes that were adopted in subsequent phases of the research.

The tools that were used for collection of information on the settlement and the community included preparation of a community map, direct observation and unstructured interviews.

- **Community Map** is a visual and spatial presentation of the settlement/community. It was considered imperative to prepare a sketch of each settlement studied to understand its geographical outlay, boundaries and its environs. The community map provided us with a comprehensive picture of the community's relationship with its social and physical environment. The mapping exercise proved very beneficial in generating interest within the community and in building a positive rapport. The map also served as a good base for spatially locating the community's resources (Resource Map).
- **Direct Observation** refers to the process of visiting the settlement/community to observe the people, their activities, relationships and recording all that was observed. This process helped us in becoming familiar with the settlement and the community. The project team used this tool to initiate an informal dialogue with the community on issues and risks confronting them and their needs.

[4] Source: Delhi A Fact Sheet NCRPB, 1999 as cited in Status report for Delhi 21 – Delhi Urban Environment and Infrastructure Improvement project, 2001

- **Key Informant Interview** refers to interviews with people who are knowledgeable about the area, about the social and economic arrangements in the community, and the issues facing the community at a macro level. The data/information generated from this tool was used for drawing a sampling plan for the sample household survey by disaggregating the community on the basis of social, economic background and spatial location of households.

#### 3.1.3.2 Community Profiling

Community profiling involved developing an understanding of the physical and social aspects of the community. Community profiling was aimed at building a picture of the social, economic and demographic characteristics of the community. This stage also aimed at ascertaining the type of housing and the level of provision of basic amenities and facilities including water, toilets, drainage, solid waste management, health and education at the community level. Another aim was also to ascertain the type, nature and capacities of local institutions and organisations to respond to local needs and grievances. The tools that were used for collecting information in this stage included slum profiles, historical timelines and unstructured interviews with community representatives.

- **Slum Profile** was in the form of a questionnaire through which information on the settlement (location, land ownership, year of establishment, total number of houses and population); details on housing (size of dwelling, area, building materials and use of the dwelling); access and nature of physical and social infrastructure services (like water, toilets, drainage, sewerage, roads, health and education); was collected through informal discussions with community members. The slum profile questionnaire has been attached with this report as Annexure 1.
- **Historical Timeline** refers to a method that helps to trace changes/developments that have taken place over a time period. This tool helped the research team in generating information about the evolution of the settlement in spatial, social and economic terms. Through this tool the research team was also able to ascertain how the communities assured access to basic amenities (water and sanitation) and how problems/issues have changed over time.
- **Unstructured Interviews** with community representatives helped substantiate and cross check the data/information collected from the above two tools.

#### 3.1.3.3 Community Based Assessment

Community Based Assessment is a participatory process of determining the nature, scope and magnitude of issues/problems confronting the community and its households within an anticipated period of time. In the current research the community-based assessment was aimed at ascertaining the following:

- Problems/Issues related to level of provision/quality of basic amenities (water and sanitation) – covering issues resulting from absence/inadequate provision or poor quality;
- Seasonal variations in the problems/issues confronted by communities related to basic amenities;
- Prioritised needs of the community;
- Factors that make particular sections of the population more vulnerable;
- Resources (capacities) present in the community to mitigate and manage risks; and
- Type and nature of relationships with various stakeholders

The tools that were used for community-based assessment included household surveys, focus group discussions, seasonality diagram, venn (chappati) diagrams and resource mapping.

- **Household Survey –** The sample household survey was conducted with the help of an exhaustive questionnaire. The household survey questionnaire has been attached with this report as Annexure 2. The data collection at the household level was aimed at collecting information on the following elements:
  - Social, economic and demographic details;
  - Access of households to basic infrastructure facilities and services and their level of satisfaction with the same;
  - Views and aspirations of the slum dwellers regarding provision of infrastructure

facilities, the current level of payment being made by households for basic services and their readiness to pay for improved services; and
- Health profile of the communities to establish a link between environmental sanitation and health.

- **Focus Group Discussion** is a participatory research tool, which provides opportunities for communities to present, share and analyse their knowledge, experiences and perceptions about their own situations. Focus Group Discussions were conducted with different population groups, namely, men, women, children, and aged in different spatial units of all the settlements in order to record the age, sex and spatial location wise issues and problems.

  The FGDs aimed at
  - Collecting information about the present level of provision and level of satisfaction of the community with basic infrastructure facilities and services like water supply, sewerage, drainage, toilets, health and education facilities.
  - Assessing the willingness of the community to pay for improved facilities.
  - Exploring the level of willingness and the ability of the Community Based Organisations and the community to take up the roles for the Operation and Maintenance of the Community Toilet Blocks.
- **Seasonal Diagram** is a diagrammatic presentation of the conditions in the community during various seasons. This tool proved useful for analysing the seasonality of issues/ problems confronted by communities. Seasonal differences affect the life of urban poor in a profound manner; many problems such as water shortage, illness patterns, are related to the seasons and many problems related to poor environmental sanitation assume disastrous proportions in certain seasons
- **Venn/Chapatti Diagrams** includes circles (chapattis) of different sizes in which the size of the circle (chapatti) denotes the importance of the issue, in the current research the venn diagram has been used to collect information on
  - Prioritised need of the Community whereby the various needs articulated by the community have been ranked/prioritised through an exercise where community members made proportionate circles to identify their prioritised needs.
- **Resource Mapping** is a visual presentation of the resources the community has at its disposal. In an urban setting, there are four major types of resources that can be harnessed: Natural resources (all open spaces, parks, trees, water bodies, elevated land, etc); Physical resources (all infrastructure, transportation, community funds etc that a community has at its disposal); Human resources (persons in the community with special skills – leadership and organising qualities, various other stakeholders); and Cultural resources (traditional coping mechanisms, social networks, beliefs and practices, etc). This tool was useful in assessing local capacities.

## 3.2 Micro-Settings: Wards of Urban Poor and Pollution

### 3.2.1 Bhalaswa and Badli: Urban Poor on the Fringe of the 'Capital' City

The peri-urban areas of Delhi are the most vulnerable of the city's population due to growing concentration of low-income settlements and inadequate provision of basic services and amenities (water and sanitation), which leads to poor environmental sanitation conditions. There has been a definite trend towards the 'peripherilisation of urban poverty and pollution', with forced movement of the polluting industries, sanitary landfill sites and informal settlements to the city's periphery. Low investment, fewer economic opportunities for the poor and lack of any planned development approach has made these areas the most vulnerable; while the future will see more concentration of the urban population in these areas of the city.

Aimed at profiling the informal settlements of Delhi for proposed intervention by the WaterAid India, the current research project selected two electoral wards of Delhi namely, Bhalaswa (Ward No. 103) and Badli (Ward No. 34) located in the north-western extremity of the city. These areas came under Municipal limit in 1957, when MCD was reorganised. Badli became a separate ward later in 1996. Badli ward lies to the west of Karnal by-pass to the north of the outer ring road and Bhalaswa ward lies to the east of the outer ring road.

Bhalaswa, a small village till the 1950s is known and has been in the news for more than one reason – for shrinking area of the large old horse-shoe lake that was once a part of the Yamuna river course and is now reduced to an area of only 70 hectares; for being one of the three non-technical sanitary landfill sites since 1992 on almost 78 acres of land, partly covering the dry bed of the lake, for inauguration of an international standard and well equipped Golf Course (2003) on 120 acres of land and, now most recently, for its environmentally unfit relocation sites accommodating slums of 'core city' in 18 sq. yards houses. While Badli, being industrial and commercial area is known for all the economic opportunities, population and hazards that these industries bring.

The historical time line drawn by the local community in these wards reveal that in the 50's Bhalaswa was a small village of approximately 300 households on the bank of a huge horse-shoe shaped lake, mainly dependent on the wells and lake for water. It had no electricity or road in the area. Badli was by then a bigger, and an older settlement. In the fifties it had approx. 800 households having handpumps and electricity. Historically, Badli-ki-Sarai, a late medieval rest house, is associated with 1857 Mutiny, when the local rebels near the Sarai killed one of the British army officials. Presence of Sarai also indicates its association with medieval trade route, for its strategic location near Karnal highway, on the one hand and Yamuna River on the other end. The first Master Plan in the sixties made Badli an industrial area and in eighties, the growing transport activities, brought Sanjay Transport Nagar there. In 1996 it was declared an electoral ward. Badli is fully urbanised and saturated to invite any relocation project.

The course and factors of development have varied in the evolution of the socio-economic profile of the areas under two wards. Bhalaswa, as an urban village with a modest agricultural base on a huge lake, was developed to accommodate both, the extra population and population of the planned areas of the core city. The other factor of its expansive base for urban poor was infrastructure development along the Ring Road and relocation of city's slums in neighbouring Jhangirpuri in 1970s. While Badli, with its strategic location, started its journey in Independent India as a developed and large twin rural settlement, Samaipur Badli. With the planned development of Badli as industrial area in sixties and for transport base in 1980's; this provided opportunities to villages of Samaipur, Sirispur, Shalimar Gaon and Haiderpur Gaon. Along with the local landless farmers or off-farm workers of rural areas, large number of migrant workers found opportunities in Badli. But lack of shelter and service provisions for the large number of workers in these economic activities, led to large number of informal settlements in the area.

Notwithstanding the differences in development pattern of the two wards, one most pressing issue that brings every section of both wards together is the impact of the sanitary landfill site, which has polluted and poisoned the rich aquifers of the area and affects the health of the residents of this area. There are also a large number of households that depend on the landfill site for their livelihoods, the rag pickers.

#### 3.2.1.1 Evolution of Bhalaswa and Neighbourhood in Community's Perception: From Rural Village to a Ward of Urban Poor, Dairy, Landfill Sites and, of course, the Golf Course

In Bhalaswa, a concrete road was first constructed within the settlement in sixties, when a few (10) handpumps were also bored and the population was not more than 1800 households. Electricity came to it in 70's, when the population of the village also grew as migrant population working in the agricultural fields, Azadpur Mandi and other factories located close to the settlement, started settling on the farmlands of Bhalsawa village in unauthorised colonies; the phenomena initiated in seventies intensified in the 80's when the construction work of the Ring Road started. It also created a fertile ground for squatter settlements; squatter settlements like B.D Patil Nagar, C D Park Jahangir Puri Bangali Basti, K Block Jahangir Puri started appearing in the neighbourhoods. The population the urban poor in the neighbouring Jahangir Puri had suddenly increased due to relocation of slums from Old Delhi during emergency. Large-scale construction activities started across the road, bringing economic opportunities for many villagers and migrant workers.

A new group, cattle keepers/milkman, was added to Bhalaswa Dairy relocation site in 1984, when hundreds of families were given 100 sq. yards plots for shelter and dairy promotion, but on the condition that they do not raise extra floor and do not use the place for commercial purpose. The electricity provision that was until now limited to street-lights was provided to village households. With these developments acting as pull factors the population of the settlement grew manifold. During this phase there were approximately 1500 households in the Bhalaswa village in which lived more than 8000 people. Piped water supply through community level stand-posts was also initiated in the eighties.

Infrastructure development in Rohini and large scale residential colonies along the ring road in the nineties also brought migrants to the above mentioned JJ clusters and unauthorised colonies like Rajeev Nagar, Shradhanand Nagar and Jain colony, which had started growing in the low-lying farmlands of Bhalaswa village. None of these areas are covered by any sewer connection and water pipeline then, except in some squatters for community stand post. The stagnant water, especially every monsoon, brings mini-disasters in the life of residents.

As a result of the above spill over effect, in the nineties, Bhalaswa village witnessed rapid increase in its population. The total population of the village alone was close to 12,000 people. With the increase in number of households and the inadequacy of the existing resources/services started becoming evident. During this time additional water and electricity connections, drainage, roads and schools were provided in the village, but the essential civic services became thinner in the nineties as the rapid growth of population continued unabated taking the total population of the village to 16,000 people, and many more thousands of neighbours in JJ clusters and unauthorised colonies and resettlement colonies.

Between 2000 and 2004, Bhalaswa witnessed significant development in infrastructure services – the access road to the settlement and the internal roads were developed, electricity supply was handed over to a private company and along with it came tariff rationalisation; the duration of supply of water was reduced but the number of connections increased, which further reduced the amount of water available per family due to low pressure. These were done not so much for the developments of the area, but for preparing the area for a fancy golf course, water skating and other recreational purpose, on one end of the Bhalaswa lake. The other end of Bhalaswa lake, a non-technical/open sanitary land fill site came in news in this period for overflowing waste due to delay in finding alternative landfill site. Dumping of toxics mixed with municipal waste, openly violating the recent Supreme Court order on hazardous waste management was reported last year.

While the colony of 4000 houses, with a full fledged milk dairy and considerable cattle wealth, along with the rest of the population of the urban poor in the area, live inhaling foul smelling vapours, flies covering every available space, dumping goes on in the 72 acres, endangering the lives of both authorised and unauthorised residents. As Mohammad Mashook Khan of the settlement says, “the people are always sick, either suffering from cholera or vomiting or fever.’’

#### 3.2.1.2 Evolution of Badli in Communities Perception: A Developed Rural Area to Planned Industrial Area with Trade and Transport

Badli, as a twin village–Samaipur Badli, in 50’s was one of the developed villages, along with other smaller villages like Haiderpur, Sirispur, Shalimar Gaon. Samaipur then had population of 800 households, and the twin village had electricity and handpumps. Presence of these basic infrastructures along with road and its strategic location of Badli near trade route provided it opportunity to become industrial area. The population swelled in the ‘60’s. As stated above migrant workers started settling here; majority were working in factories located close to Badli. The 70’s witnessed large-scale migration along with employment of the local landless and off farm workers of neighbouring villages. Water supply covered the entire settlement, though it was then provided at the community level through stand-post and sewer was laid in the planned area.

In the ‘80s, the population of the settlement grew manifolds and as it grew, it engulfed the agricultural land and common property lands of the four neighbouring villages. As

construction activities in Rohini DDA flats further necessitated the growth of squatters in the area. Almost one dozen unauthorised colonies appeared on the farmlands of the neighbouring villages, six slum squatters on public land, while the population of urban villages increased many folds.

The '90's witnessed further increase in population and greater concentration in the number of people living in these settlements. The total population of Samaipur alone was close to 18,000 people (3000 households). During this time, drainage, roads and schools (anganwadi and private schools) were provided in the villages. The social composition of the village was transformed and migrants from states neighbouring Delhi started becoming dominant social group. The socio-economic profile of the areas close to Badli started undergoing significant and visible change. In this decade a Senior Secondary School was established.

The rapid growth of population continued unabated taking the total population of Samaipur village to 20,000 people (3150 households) in 2001. There were significant developments related to the infrastructure services during this period – the access road to the settlement and the internal roads were developed, electricity supply was handed over to a private company; factories were constructed around the settlement; commercial area in the settlement also increased. Today the Badli ward covers altogether 32 settlements in 31 sq. kms area with a total population of 2,14,000 people. It has four urban villages with 88,000, four rural villages with 26,000 population, ten unauthorised colonies with 34,000, eight J clusters with 24,000, four resettlement colonies with 12,000 and two DDA colonies with 30,000 population.

### 3.2.2 Bhalaswa and Badli: Access to Basic Amenities

The following section presents the settlement and population composition of these wards ascertaining the relative proportion of population residing in different types of formal and informal settlements. This section also presents the current level of provision of basic services and amenities, including water supply, sanitation, solid waste management, health and education. It also outlines the issues and problems confronting different types of settlements/ communities (formal and informal) in accessing adequate and quality basic amenities and services.

#### 3.2.2.1 Bhalaswa Ward

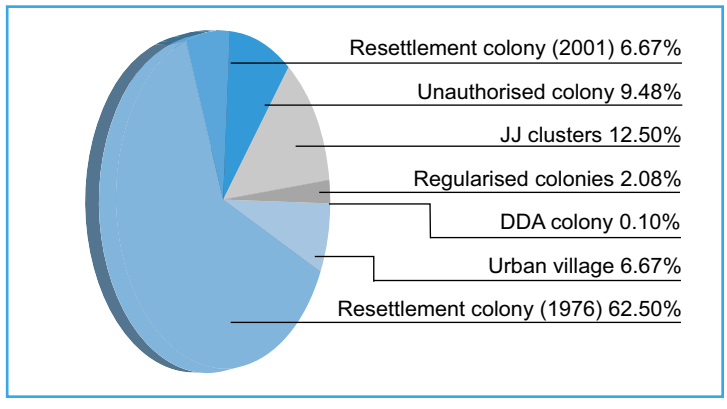
**Population and Demographics**

Bhalaswa ward has a total population of 1,92,000 people (48,000 households). The ward has only one formal settlement namely, DDA MIG Flats Jahangir Puri which has 50 households and an approximate population of 200 people. The ward has eleven informal settlements, including JJ clusters (4), unauthorised colonies (3), resettlement colonies (2), urban village (1) and one regularised colony, namely, Bhalaswa Dairy. Of the total population of the ward 1,87,800 people (97%) reside in informal settlements.

## Table 1: Settlement Profile and Population Composition in Bhalaswa Ward

| Type of settlements | Number of Settlements | Names of Settlements | Households | Population |
|---|---|---|---|---|
| Urban Village | 1 | Bhalaswa Gaon | 3200 | 12800 |
| Resettlement Colony (1976) | 1 (5 blocks) | Jahangeer puri B, C, I, J, K Blocks | 30000 | 120000 |
| Resettlement Colony (2001) | 1 (2 pockets) | Bhalaswa Resettlement Colony B2, B4, C1, D1 and D4 | 3200 | 12800 |
| Unauthorised Colony (in 80's | 3 | Rajeev Nagar<br>Shradhanand Nagar<br>Jain Colony | 4550 | 18200 |
| JJ clusters (1980) | 4 | Basant Dada Patil Nagar<br>ITI Cluster Jahangir Puri<br>C D Park Jahangir Puri<br>Bangali Basti<br>K Block Jahangir Puri | 6000 | 24000 |
| Regularised colonies (1984) | 1 | Bhalaswa Dairy | 1000 | 4000 |
| DDA Colony | 1 | DDA MIG Flats Jahangir Puri | 50 | 200 |

## Figure 1: Settlement Composition in Bhalaswa Ward




Being a ward located on the city's periphery, a major proportion (70%) of the ward's population resides in resettlement colonies. Delhi witnessed a massive resettlement drive during 1975–77 when large informal settlements that were located in the city's centre were shifted to the city's periphery. A massive resettlement colony that was developed to house the displaced urban poor was Jahangir colony in Bhalaswa ward. At present, this settlement has 30,000 households and an approximate population of 1,20,000 people. The resettlement during 2000–01 saw another resettlement colony come up in this ward, namely, Bhalaswa resettlement colony which has 3200 households and an approximate population of 12,800 people. The ward has three unauthorised colonies, namely, Rajeev Nagar, Shradhanand Nagar and Jain colony in which reside 18,200 people, accounting for 9.48 per cent of the ward's total population. There are four JJ clusters in the ward, majority (3) of which are encroachments that have come up on the periphery of Jahangirpuri resettlement colony, these include ITI Cluster Jahangir Puri, C D Park Jahangir Puri, and Bangali Basti K Block Jahangir Puri. A total population of 24,000 people reside in these JJ clusters, accounting for 12.5 per cent of the ward's population. Bhalaswa Gaon is the only village that has been engulfed within the city's municipal limits and acquired the status of an urban village. The ward also has a regularised colony, namely, Bhalaswa Dairy.

### Access to Water Supply

The main sources of water supply for Bhalaswa ward are as follows:

- Delhi Jal Board Pipeline (Haiderpur water plant);
- Community handpump;
- Personal Handpump;
- Delhi Jal Board tankers; and
- Delhi Jal Board Booster pumps.

The nature of provision, level of access and the quality of water supply vary with the type of settlement. The formal settlements (DDA colony) and regularised settlements (Bhalaswa Dairy) have individual level water supply with all the connections functional and metered.

With respect to the informal settlements in the ward, while the Bhalaswa Gaon (urban village) and the resettlement colony of Jahangirpuri have individual level water supply, Bhalaswa resettlement colony and JJ Clusters have access to community level water supply through stand-posts. The unauthorised colonies due to no water supply from the service provider have to depend on handpumps and tankers for water.

**Table 2: Water Supply in Bhalaswa Ward: Sources, Access and Issues**

| Type of settlement | Water Source | Existing Resources | Functional | Quality Quantity Issues |
|---|---|---|---|---|
| Urban Village | Piped water supply from Delhi Jal Board; Handpump; Water Supply from Haiderpur Plant | Household level Connection | Majority are functional | Pressure of water supply is low Average supply is for only 2–3 hours per day Quality of water is satisfactory |
| Resettlement Colony (Jahangirpuri) | Piped water supply from Delhi Jal Board; Handpump; Water supply from civil line zones | Household level Connections and Personal Handpumps | Majority are functional; Delhi Jal Board water pipeline has leakages | Pressure of water supply is low Poor quality of water – Contaminated with mud |
| Resettlement Colony (Bhalaswa) | 3 community stand-posts (4 taps in each); Tankers | Tanker supply (twice a week)<br><br>Community stand-posts – water supply for 5-6 hours per day | Only 2 stand-posts are functional | Stand-post water is not potable Tanker water is used for drinking Irregular supply of water through tankers |
| Unauthorised Colony | Tubewell; Personal handpump; Tankers | | Tanker supply twice a week<br><br>DJB Booster Supply is not functional at Rajeev Nagar | Poor quality of water Inadequate Supply Supply time isn't fixed Tanker supply is irregular Few colonies depend only on tankers |
| JJ clusters | Community tap; Handpumps; Tankers | Shared handpumps, community tap, illegal connections | 2-3 community tap are there; Personal handpumps; Tanker supply isn't regular | Poor quality of piped water supply; Tanker water supply is there only in D. B Patil Nagar |
| Regularised Colonies | Delhi Jal Board Piped water supply from Delhi Jal Board; Personal handpump | Individual Household level Connections | Majority are functional | Low pressure Quality is good |
| DDA Colony | Piped water supply from Delhi Jal Board; Supply from Haiderpur Plant | Household level Connections | Majority are functional, 2-3 hour supply | Quality is good Pressure is low Online motor is being used for upper stories |

**Access to Sanitation**

Being located at the periphery of the city, the coverage by the sewerage network is much lower when compared to inner city wards. Bhalaswa ward falls within the North West IV Sewerage Zone. Only formal settlements, namely, DDA colony and resettlement colony of Jahangirpuri are connected to the city level sewerage system. While Bhalaswa resettlement colony and unauthorised colonies have individual toilets in almost all house, their disposal system is based on a septic tank with final discharge in the storm water drainage. Such technologically redundant and inappropriate disposal systems are creating poor environmental conditions in the informal settlement and also polluting city level surface water sources.

The municipal authority provides services for house-to-house collection of garbage to formal and regularised colonies, namely, DDA colony and Bhalaswa Dairy. The present system of garbage collection from informal settlements is limited to placing a portable receptacle or built up garbage bin in the vicinity of the settlement at a place accessible to the municipal refuse collection lorry. The residents of informal settlements are expected to deposit their household refuse into these bins which are emptied by the municipal vehicles during the day. Of the informal settlements located in Bhalaswa ward while garbage collection services are provided to urban village (Bhalaswa Gaon), resettlement colonies (Jahangirpuri and Bhalaswa resettlement colony), and JJ clusters (Basant Dada Patil Nagar, ITI Cluster Jahangir Puri, C D Park Jahangir Puri and Bangali Basti K Block Jahangir Puri) there are no services available for unauthorised colonies.

The Solid Waste Management Department is located within the ward office of the Municipal Corporation of Delhi. The Department has a total staff strength of 364, that includes 1 Sanitary Inspector, 5 Assistant Sanitary Inspectors, 3 Sanitary Guides, 270 regular sweepers and 85 sweepers who have been employed as daily wagers. As per the officials in the Municipal Corporation, a total of 10 to 12 truck loads of garbage is collected from the ward and dumped in the Sanitary Landfill Site at Karnal Bypass.

**Medical Facilities**

There is one hospital located within the ward, namely Babu Jagjivan Ram Hospital with 100 beds capacity. The ward has four Primary Health Centres, two of which are located in Bhalaswa and the other two in Jahangirpuri.

**Education Facilities**

The ward has a total of sixteen primary schools and twelve primary schools that have a nursery. The total number of children enrolled in these schools is 19,000. The ward has three Senior Secondary Schools in which 4,500 students are enrolled.

**NGO Presence**

Ankur, a well-known NGO, has been working amongst the people who were relocated to Bhalaswa in 2000–01 for more than a decade. They are a lot more organised than people living in other blocks. The activists of Ankur and Bhalaswa Lok Shakti Manch have staged many protests against the pathetic water condition in the colony and forced the authorities to improve it to some extent. Now, in town planning parlance, the arrival of sarkari taps signals an integration of the settlement with the main supply network of the city. There are five other NGOs that are actively working with urban poor communities in newly resettled colonies and nearby slums in Bhalaswa ward. These include Kirandeep (working in Bhalaswa resettlement colony); Chetnalya (working in Jahangirpuri resettlement colony); Navjyoti Delhi Police Foundation (working in Jahangirpuri resettlement colony); Samarth (working in B. D. Patil Nagar, Bhalaswa) and World vision. In the old resettlement colony of Jahangirpuri, there are more than seventeen NGOs who have been working in the area for more than a decade; some of them such as Action India, PRAYAS, Chetanalaya are well known NGOs in the city.

#### 3.2.2.2 Badli Ward

**Population and Demographics**

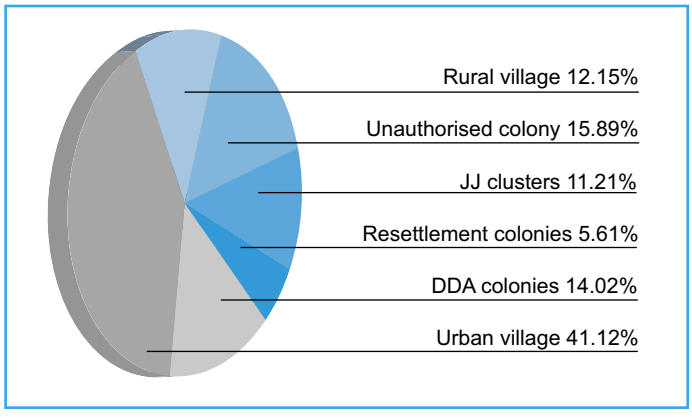
Badli ward located in the north-western extremity of the city is spread over an area of 31 sq. kms. The ward has a total population of 2,14,000 people. Badli ward has two formal urban settlements, namely, DDA colony, Sector 15, Rohini A, B, C, D, E, F and G Block and DDA colony Shalimar Bagh. A total population of 30,000 (14% of the ward's total population) resides in these formal colonies. The ward has twenty-six informal settlements, including eight JJ clusters, ten unauthorised colonies, four resettlement colonies and four urban villages. Of the total population of the ward 1,58,000 people (73%) reside in informal settlements. The ward also has four rural villages, namely, Libaspur, Siraspur, Kharagarhi and Kankarkhara in which reside 26,000 people (12.14% of the total population of the ward).

## Table 3: Settlement Profile and Population Composition in Badli Ward

| Type of settlements | Number | Names of Settlements | Households | Population |
|---|---|---|---|---|
| Urban Village | 4 | Shalimar Gaon<br>Haiderpur Gaon<br>Badli Gaon<br>Samaipur Gaon | 22000 | 88000 |
| Unauthorised Colony | 10 | Ambedkar Nagar Extension<br>Badli Extension<br>Samaipur Gaon Extension<br>Shivpuri<br>Yadav Nagar E Block<br>Swaroop Nagar E to L Block<br>Chandan Park<br>Bhagat Singh Park<br>Jiwan Park<br>Rana Park<br>Ambey garden | 8500 | 34000 |
| JJ clusters | 8 | J J Camp Ayurvedic Hospital Road No. 26 Nehru camp,<br>Dharna Camp, Bahujan camp,<br>Ambedkar Camp<br>J J Camp Badli Sector 29<br>J J Camp Railway Phatak No. 8<br>J J Camp MCD Colony, Badli<br>J J Camp Bhagwanpura<br>Sanjay Colony Lane No. 9<br>J J Camp Shalimar Gaon | 6000 | 24000 |
| Resettlement colonies | 4 | Ambedkar Nagar<br>Badli Extension<br>Yadav Nagar A, B, C and D<br>Swaroop Nagar A to D Block | 3000 | 12000 |
| DDA Colony | 2 | DDA Colony, Sector 15, Rohini A, B, C, D, E, F and G Block<br>DDA Colony Shalimar Bagh | 7500 | 30000 |
| Rural Village | 4 | Libaspur<br>Siraspur<br>Kharagarhi<br>Kankarkhara | 6500 | 26000 |

The largest proportion of the ward's population resides in urban villages. The ward has four villages that have been incorporated within the ever-expanding municipal limits of the city. A total population of 88,000 lives in these urban villages accounting for 41 per cent of the ward's population. The ward also has a large number of unauthorised colonies, which are largely encroachments that have come up on the periphery of resettlement colonies and urban villages. Badli ward has ten unauthorised colonies in which reside 34,000 people, accounting for 16 per cent of the wards total population. There are eight JJ clusters in the ward, 11 per cent of the ward's population resides in these clusters. Badli is also home to four resettlement colonies that were developed during early 2001 to house urban poor communities that were shifed from the centre of the city. The resettlement colonies include Ambedkar Nagar, Badli Extension, Yadav Nagar A, B, C and D and Swaroop Nagar A to D Block, a total population of 12000 people reside in these colonies.

## Figure 2: Settlement Composition in Badli Ward




### Water Supply

The main sources of water supply in Badli ward are as follows:

1. DJB Pipeline (Haiderpur water plant)
2. DJB Tubewell (from Jhangola water works)

3. DJB handpump (High dent: 110 ft deep)
4. HH Individual Handpump
5. Wells (very rare)
6. DJB tankers
7. DJB Booster pumps

Badli ward falls under the North West II Zone of the Delhi Jal Board. Sources at the Delhi Jal Board shared that a total of 23.9 mgd of water is supplied in the ward everyday. The demand for water in the ward is 35 mgd and the current supply is 23.9 mgd, resulting in a shortfall of 11.1 mgd. Of the total supply, while 22.0 mgd is supplied to formal colonies, urban villages, rural villages and resettlement colonies, only 1.90 mgd is supplied to unauthorised colonies (0.08 mgd), unauthorised/regularised colonies (1.30 mgd) and JJ clusters (0.52 mgd).

The nature of provision, level of access and the quality of water supply vary with the type of settlement. The formal settlements (DDA colony) have individual level water supply with supply from the Haiderpur Plant. All the connections are functional and metered. With respect to the informal settlements in the Ward, while the urban villages and the resettlement colonies have individual household level water supply, the JJ clusters have access to community level water supply through stand-posts. The unauthorised colonies do not have any water supply and depend on tubewells, handpumps and tankers for water. The rural villages receive individual household level supply and have access to handpumps to augment the amount of water available.

**Table 4: Water Supply in Badli Ward: Sources, Access and Issues**

| Type | Water Source | Existing Resources | Status | Issues related to water Supply |
|---|---|---|---|---|
| Urban Village | Piped water supply from Delhi Jal Board;<br>Handpump; Water from Haiderpur Water plant for Haiderpur Gaon, badli gaon and Shalimar Village; for Samaipur Village water is from Jhangola Water Works | Individual Household level Connections | All are functional | Quality of water is satisfactory<br>Pressure of water is very low<br>Average supply is for 2-3 hours per day |
| Unauthorised Colony | Tubewell<br>Deep handpumps<br>Personal handpump<br>Tankers | Tubewells and handpumps, tanker | Only 25 per cent Govt. handpumps are functional | Poor quality of water<br>Inadequate Supply<br>Supply time isn't fixed<br>Tanker supply isn't regular<br>Few colonies depend only on tankers |
| JJ clusters | Community tap<br>Handpumps | Shared handpumps, community tap, illegal connections | 2–3 community tap only personal | Poor quality of piped water supply;<br>Tanker water supply is also not potable |
| Regularised colonies | Piped water supply from Delhi Jal Board;<br>Personal handpumps | Individual Household level Connections | All are functional | Low pressure<br>Quality is good |
| DDA Colony | Piped water supply from Delhi Jal Board;<br>Supply from Haiderpur Plant | Individual Household level Connections | Functional, 2–3 hour supply | Quality is good<br>Pressure is low<br>Online motor is being used for upper stories |
| Rural Village | Piped water supply from Delhi Jal Board;<br>Handpumps<br>Water from Jhangola Water Works | Individual Household level Connections and personal handpumps | All are functional | Poor quality of water<br>Low pressure<br>Iron content is high<br>Foul smell |

**Sewerage**

Being located at the periphery of the city the coverage by the sewerage network is only 60 per cent of the total area. Bhalaswa ward falls within the North West II Delhi Jal Board Zone. Only formal settlements, resettlement colonies and parts of urban villages are covered by the sewerage system. The following are the colonies covered by the sewerage system in Badli ward – DDA colony Sector 15 Rohini, Badli Industrial Area, Badli Gaon, Sanjay Gandhi transport Nagar, Staff Quarters Haiderpur, Ambedkar Nagar, Ambedkar Nagar Sector 7, DDA Quarters Shalimar Bagh, Shalimar Gain and Haiderpur.

**Solid Waste Management**

The municipal authority provides services for house-to-house collection of garbage to formal colonies, namely, DDA colonies in Rohini and Shalimar Bagh. Of the informal settlements located in Badli ward while garbage collection services are provided to urban villages, resettlement colonies and JJ clusters there are no services available for unauthorised colonies.

The Solid Waste Management Department is located within the ward office of the Municipal Corporation of Delhi. The department has staff strength of 587, which includes 2 Sanitary Inspectors, 11 Assistant Sanitary Inspectors, 248 regular sweepers, and 326 sweepers who have been employed as daily wagers. As per the officials in the Municipal Corporation a total of 10 truck loads of garbage is collected from the ward and dumped in the Sanitary landfill Site at Karnal By pass.

**Health Facilities**

There are two hospitals run by the Municipal Corporation of Delhi located within the ward, namely, Ayurvedic Hospital with 100 beds and IPPAID Hospital with 10 beds. The ward has two MCD Dispensaries and one MCD Sub Health Centre.

**Education Facilities**

The ward has a total of seventeen primary schools and eleven primary schools that have a nursery. The total number of children enrolled in these schools is 20,000. The ward has four Senior Secondary Schools in which 6000 students are enrolled.

**NGO Presence**

'Nirman Majdoor Awas Sthal' of 250 families at Badli More, Haiderpur, presents an alternative picture that how poor communities can rebuild their own settlements according to their own needs and priorities. In 1990, when a slum in Prashant Vihar was demolished, Nirman Majdoor Panchayat Sangam led a protest for four months till DDA allocated the land to slum dwellers. In December 1990, the people in the resettlement colonies were dispossessed when a fire gutted their home. This time they decided to build their own self designed colony with houses of 13x8 and 12x10 ft, three bathroom and toilet complexes, health centre and schools. Apart from committed organisation like Nirman Majdoor Panchayat Sangam, there are six NGOs that are actively working with urban poor communities in Badli ward. These include Child home (in Libaspur rural village); Sampoorna (in Suraj park, Badli); ACSR (in Badli Industrial Area); JEET (in Suraj Park, Badli), World vision and Sur Nirman Kendra (in Haiderpur rural village).

### 3.2.3 Bhalaswa and Badli-Where and How do People Live: A Comparative Scenario

#### 3.2.3.1 Where do people live: Legal status of settlements

Only 3 per cent population in Bhalaswa and 20 per cent in Badli live in DDA flats and regularised colonies. In other words, 97 per cent population in Bhalaswa and 80 per cent in Badli wards, on the N-W fringe of the city, live in informal and underserved settlements

like JJ clusters, unauthorised colonies, resettlement colonies, urban villages and a few in rural villages in Badli ward; however, the number and types of settlements as well density of population living in different types of settlements vary significantly. While 197,000 population in Bhalaswa live in 13 settlements, one third of them in resettlement colonies alone and only 6.67 per cent live in one urban villages, Badli's 214,000 population live in 32 settlements, only four of their urban villages count for 41 per cent of the total population and none in resettlement colonies. Nevertheless, total population in JJ clusters is interestingly same (24,000) in each of these wards, the density seems to be more in 5 slums of Bhalaswa, compared to 8 JJ clusters of Badli. While the total population of 34,000 in 10 unauthorised colonies in Badli wards is much higher than 18,000 population in 3 large unauthorised colonies of Bhalaswa ward. These are the two types of settlements-slums and unauthorised colonies, apart from the urban villages and new resettlement colonies that require maximum development resources, planning and legal measures to regularise the settlements with secured land tenure and services. The condition of water and sanitation and access to private water tap, toilet and drainage is much worse in these types of settlements.

**Table 5: Population in Different Types of Settlements of Bhalaswa & Badli**

| Types of Settlements | Bhalaswa | | | Badli | | |
|---|---|---|---|---|---|---|
| | Settlements (No.) | Population | % of Ward Population | Settlements (No.) | Population | % of Ward Population |
| JJ clusters | 5 | 24,000 | 12.5% | 8 | 24,000 | 15.89 |
| Unauthorised colony | 3 | 18,200 | | 10 | 34,000 | 15.8 |
| Resettlement colonies | 2 One (five pockets) One with two pockets) | 120,000 (settled in, Year 1977) & 12,800 (new, settled in Year 2000) | 62.5 at old and 6.67 at new colonies | All resettlement colonies have been regularised | X | X |
| Regularised colony | 1 | 4,000 | | 4 | 12,000 | 5.61 |
| Urban village | 1 | 12,800 | 6.6 | 4 | 88,000 | 41.12 |
| Rural Village | X | X | X | 4 | 26,000 | 12.15 |
| DDA | 1 MIG | 400 | .10 | 2 (Rohini Sec.15 and Shalimar bagh) | 30,000 | 14.02 |
| Total | 13 | 197, 000 | 100 | 32 | 214,000 | 100 |

### 3.2.3.2 How do People Live! : How Basic are Urban Basic Services?

The nature of provision, level of access and the quality of water supply vary with the legal status of different settlements. The formal settlements (DDA colony) and regularised settlements, which constitute 3 per cent in Bhalaswa and 20 per cent in Badli, have individual level water supply with all the connections functional and metered. While the urban village and the old resettlement colonies settled in 1970s, such as Jahangirpuri in Bhalaswa ward have individual level water supply, the recently relocated or resettled colonies and JJ clusters have access to community level water supply through inadequate number of stand-posts and, at places, a few functional community handpumps. The unauthorised colonies due to no water supply from the service provider have to depend on handpumps and tankers for water. Settlers of some unauthorised colonies have paid the huge costs for laying water pipelines to DJB, as per the prescribed rates and provisions of DJB, but the government has been sitting over the money for years without any action. On the other hand, the spot or location for distribution of tanker water is usually disputed, as that is always determined by the local influential Pradhans, having connections with local MLA. The vulnerable sections of the settlements get only the last drops of tanker water, if that is left after distributing the influential families.

Relative complexities and ironies of multiplicity of water sources supplying inadequate and non-potable water can be gauged from the fact that the seven different sources of water provision in Badli and five main sources of that in Bhalaswa[5] together cannot provide adequate potable water regularly to even 15 per cent of the residents in two wards.

Distribution of piped water and the status of sanitary condition shows greater amount of inequity built-in in the city's water supply and sanitation norms and administrative system. The demand for water in Badli ward is 35 mgd and the current supply is 23.9 mgd, resulting in a shortfall of 11.1 mgd. Of the total supply while 22.0 mgd is supplied to formal colonies, urban villages, rural villages and resettlement colonies, only 1.90 mgd is supplied to unauthorised colonies (0.08 mgd), unauthorised/regularised colonies (1.30 mgd) and JJ clusters (0.52 mgd). That means if more than 92 per cent of the water supplied in Badli ward goes to 20 per cent population and rest 80 per cent population get 8 per cent of the total piped water supply, one can very well imagine the situation of piped water supply in the wards like Bhalaswa, where only 3 per cent population lives in the formal settlements. 12,800 people in the newly relocated resettlement colony at Bhalaswa mirrors the most inhuman situation, where for 2,560 households there are 3 community stand-posts (4 taps in each), out of which only two stand posts are functional, supplying water for 4 to 5 hours. Since the water supplied through stand post is not potable, tankers come twice or thrice a week. There is no proper dustbin or garbage station to invite sanitation workers.

Being located at the periphery of the city, the coverage by the sewerage network in both wards is much lower when compared to inner city wards. In Badli only 60 per cent area is covered by sewerage network, while in Bhalaswa only a small DDA colony and resettlement colony of Jahangirpuri are connected to the city level sewerage system. While in the regularised and unauthorised colonies have the presence of individual toilets in almost all houses, their disposal system is based on a septic tank with final discharge in the storm water drainage.

In both wards the municipal authority provides services for house-to-house collection of garbage to formal and regularised colonies, The present system of garbage collection from informal settlements is limited to placing a portable receptacle or built up garbage bin in the vicinity of the settlement at a place accessible to the Municipal refuse collection lorry. While garbage collection services are provided to urban villages, resettlement colonies and JJ clusters there are no services available for unauthorised colonies in any of these wards.

In terms educational facilities, both wards have 16 to 17 primary schools, 11 to 12 pre primary/nursery schools of Bhalaswa ward has a total of sixteen primary schools and twelve pre-primary schools that have a nursery. The total number of children enrolled in these schools are 23,000 to 24, 000. Presence of many NGOs working in the areas of primary education, especially in old resettlement colonies and slums of Bhalaswa and unauthorised colonies and slums of Badli have helped to improve the educational profile of these wards. Given the environmental conditions in both wards, health facilities are inadequate, partly due to lack of information with the poor community and partly due to poorly managed available health services. Badli seems to be having more number of municipal as well as private health services compared to Bhalaswa.

Most NGOs in these areas have been working mainly on primary education, reproductive and child health and a few on savings and credit. Women, children, adolescent and youth are the key target groups for most NGO's interventions. Presence of a large number of informal community groups-SHGs, community watch group, Youth clubs apart from CBOs like Nirman Majdoor Panchayat Sangam in Badli and Bhalaswa Lok Shakti Manch can provide impetus for large scale changes in the area provided, they are brought together and enabled to voice together effectively to address the key issues like land tenure and environmental improvement in the area.

[5] In Bhalaswa- key sources of water are Delhi Jal Board Pipeline (Haiderpur water plant), Community Handpump, Personal Handpump, Delhi Jal Board tankers, Delhi Jal Board Booster pumps, in Badli, in addition to these there are a few wells in rural villages and DJB Tubewell (from Jhangola water works) in other areas.

## 3.3 Main Findings

The present study aims to highlight micro level implications of iniquitous meso and macro level policies and practices of urban development and urban poverty alleviation in Delhi. The overall objective of this study is to explore the scope and rationale for programmatic intervention by WaterAid India in Delhi. Based on an analysis of various factors operational in large urban centres, Delhi was considered to be the most challenging terrain for civil society to test an approach for improved access to water and sanitation facilities in the low-income settlements and thus the research is located here.

The "ward" has been envisaged to be the unit of decentralised governance where all local developmental programmes would take shape. In this background, the current study has also chosen "ward" as one of the levels of ascertaining and analysing issues and problems related to provision, quality, operation and management as well as grievance redressal mechanisms for basic services and amenities. Of all the wards in Delhi, those located on the periphery of the city are the poorest in terms of access to resources and due to largest concentration of 'informal settlements'. These wards also carry the burden of the city's pollution agents, including polluting industrial units and the garbage generated by the city. The current study covers two peripheral wards located in North West Delhi, namely, Bhalaswa and Badli.

Viewing the magnitude of issues facing urban poor communities, it was imperative to involve them in identifying and understanding issues related to access and quality of basic amenities and facilities, as well as environmental risks and hazards resulting from poor environmental sanitation. A participatory approach was considered vital for providing an opportunity for communities to present, share and analyse their perceptions, experiences and knowledge and to facilitate a realistic assessment of issues, risks and hazards confronting these communities. The current research is based on active participation of all sections of the community including women, children, youth, aged, and community based organisations through participatory research techniques and processes.

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The course and factors influencing the development of both the wards have been quite different. Bhalaswa, originally an urban village with a modest agricultural base on a huge lake, grew to accommodate the migrants from outside the city as well as population from informal settlements located in the city's core that were forced to shift to the city's periphery. Another factor that led to its growth was the infrastructure development along the Ring Road and relocation of city's slums in neighboring Jhangirpuri in 1970s. On the other hand, Badli, with its strategic location, started its journey in Independent India as a developed and large twin rural settlement of Samaipur Badli. With the planned development of Badli as an industrial area in 1960s and as a transport base in 1980's the villages of Samaipur, Sirispur, Shalimar Gaon and Haiderpur Gaon became urbanised. Along with the local landless farmers or off-farm workers of rural areas, large number of migrant workers found opportunities in Badli. But lack of shelter and service provisions for the large number of workers in these economic activities, led to large number of informal settlements in the area.

CHAPTER 4

# Situational Analysis: Micro Level

The current chapter presents the findings of the primary research covering eight 'informal settlements' including JJ clusters, unauthorised colonies, resettlement colonies and urban villages in two electoral wards of Delhi, namely, Badli and Bhalaswa.

The primary research involved conducting community-based assessments of the current situation, problems and resources. The number of focus group discussions (FGDs) conducted in each settlement varied from eight to ten, with each FGD having approximately 25 participants drawn from various segments of the community differentiated on the basis of geographical location (settlement: periphery and core), gender (males and females), age (children, youth, adults and aged), economic (income groups) and social characteristics (religion, caste, state of origin, etc).

A sample household survey was also conducted which covered 20 households in each informal settlement; leading to a total sample of 160 households across eight settlements. The sampling process to identify the 20 most representative households in the community was same as for FGD, described above. The community, through its elders and leaders, undertook the sampling exercise to ensure that the household survey was representative of the community.

Table gives the list of the 'informal settlements' covered by the primary research.

**Table 1: Informal Settlements Covered by Primary Research**

| Type of Informal Settlement | Ward | Name of the Settlement | Number of households Surveyed |
|---|---|---|---|
| JJ Cluster | Bhalaswa | B. D. Patil Nagar | 20 |
| | Badli | Sanjay Colony | 20 |
| Unauthorised Colony | Bhalaswa | Rajeev Nagar | 20 |
| | Badli | Bhagat Singh Park | 20 |
| Resettlement Colony | Bhalaswa | Bhalaswa Colony | 20 |
| | Badli | Ambedkar Nagar | 20 |
| Urban Village | Bhalaswa | Bhalaswa Gaon | 20 |
| | Badli | Samaipur Gaon | 20 |

## 4.1 Population and Demographics

In the eight informal settlements covered by the primary research, a total of 17,634 households and a total population of 97,240 was recorded. The sample household survey, which covered 160 households across these settlements, revealed a total population of 1,062.

The study validates the recent trend of urban poor and various types of informal settlements being absorbed by the city's peripheral areas. Informal settlements like JJ clusters and unauthorised colonies have come up in peripheral wards as a result of recent migrants settling here since the city's core is 'protected' and does not permit squatting. Further, the agricultural fields and industrial units/factories that are being shifted to these areas from the

city's centre also act as a pull factor for people of neighbouring urban and rural centres. The large size and high rate of growth of JJ clusters and unauthorised colonies validates these trends. The largest settlement covered under this study is B D Patil Nagar, a JJ cluster located in Bhalaswa Ward, which has a population of 22,500. The unauthorised colonies also have a rapidly growing population (Rajeev Nagar in Bhalaswa ward and Bhagat Singh Park in Badli have a population of 16,500 and 5,600 respectively).

The peripheral wards of the city have also been witness to rapid urbanisation of rural villages. The older rural settlements have acquired urban characteristics after being brought into the city's municipal limits. Over time due to inadequate access to services and amenities these settlements have acquired the status of "informal" settlements. Both these wards have large urban villages; Bhalaswa Gaon and Samaipur Gaon having a total population of 19,000 and 20,000 respectively.

The establishment of resettlement colonies, covered under this study, coincides with two phases of large-scale resettlement of informal communities in Delhi whereby poor communities were evicted from the city's centre and resettled in far-flung peripheral areas. While Ambedkar Nagar, a resettlement colony located in Badli ward was established during the first phase of resettlement in 1976, Bhalaswa resettlement colony was established in the more recent phase of resettlement during 2001-02

### 4.1.1 Demographic and Socio-Economic Profile

#### 4.1.1.1 Family Size

The average family size in the informal settlements covered by this study is five persons per family. The inter settlement variations range from four to six persons per family. The family sizes recorded in all the eight settlements is close to the national average of five persons per family. The family size is the largest in urban villages (Bhalaswa Gaon and Samaipur Gaon have an average family size of 5.9 persons and 6.45 persons respectively). The larger family size in urban villages can be attributed to the fact that in these settlements majority of the families are joint families staying in one house. In other types of informal settlements, the average family size hovers close to the national average.

The sample household survey reveals an average family size of 6.6 persons. In the eight settlements covered the average family size ranges from five persons per family in Sanjay Colony (JJ cluster) to 8.5 persons per family in Bhalaswa Gaon (urban village).

The large family size has a direct bearing on the amount of space available per person within small dwelling units available in these settlements. Due to limited and irregular incomes a large family size also limits the capacities of families to access/afford housing and infrastructure facilities.

## Table 2: Demographic Profile of Slums Surveyed

| | Age Group | | | | | | Total | | Grand Total | Number of House-holds | Family Size |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | > 18 years | | 8–18 years | | < 8 years | | | | | | |
| | Male | Female | Male | Female | Male | Female | Male | Female | | | |
| B. D. Patil Nagar (JJ Cluster) | 7,400 | 7,300 | 2,600 | 2,300 | 1,500 | 1,400 | 11,500 | 11,000 | 22,500 | 4,500 | 5.00 |
| Rajeev Nagar (Unauthorised Colony) | 6,100 | 5,900 | 1,500 | 1,400 | 900 | 700 | 8,500 | 8,000 | 16,500 | 3,000 | 5.50 |
| Bhalaswa (Resettlement Colony) | 1,400 | 1,325 | 300 | 275 | 250 | 200 | 1,950 | 1,800 | 3,750 | 6,84 | 5.48 |
| Bhalaswa Gaon (Urban Village) | 8,900 | 6,300 | 1,200 | 1,000 | 900 | 700 | 11,000 | 8,000 | 19,000 | 3,200 | 5.94 |
| Sanjay Colony (JJ Cluster) | 2,600 | 2,230 | 500 | 460 | 400 | 300 | 3,500 | 2,990 | 6,490 | 1,250 | 5.19 |
| Bhagat Singh Park (Unauthorised Colony) | 1,600 | 1,400 | 1,140 | 1,030 | 230 | 200 | 2,970 | 2,630 | 5,600 | 1,200 | 4.67 |
| Ambedkar Nagar (Resettlement Colony) | 1,100 | 1,000 | 450 | 400 | 250 | 200 | 1,800 | 1,600 | 3,400 | 700 | 4.86 |
| Samaipur Gaon (Urban Village) | 6,000 | 4,800 | 3,500 | 3,000 | 1,500 | 1,200 | 11,000 | 9,000 | 20,000 | 3,100 | 6.45 |
| Grand Total | 35,100 | 30,255 | 11,190 | 9,865 | 5,930 | 4,900 | 52,220 | 45,020 | 97,240 | 17,634 | 5.51 |

Estimates based on community consultations

#### 4.1.1.2 Age Sex Composition

Of the total population recorded in the informal settlements, 67 per cent (65,355) are adults (over 18 years), 11 per cent (10,830) are youth (8–18 years) and 22 per cent (21,055) children. An analysis of the inter settlement population composition reveals that the urban villages have more than one-third of their population as children (under 8 years). In all other types of informal settlements the proportion of children (under 8 years) ranges from 12 per cent (Ambedkar Nagar resettlement colony) to 25 per cent (Bhagat Singh Park unauthorised colony). The proportion of adults (over 18 years) ranges from 53 per cent in Bhalaswa Gaon (urban village) to 80 per cent in Ambedkar Nagar resettlement colony.

An analysis of the population composition reveals that approximately one-third of the population of these settlements is dependant (including youth and children). A large family size coupled with a high proportion of dependent population has serious implications on the family's income and their capacities to set aside money for investing in infrastructure services and facilities. However, it is important to acknowledge that in a majority of these families, youth and children are gainfully employed in the informal sector and although they may be earning meagre sums they are still contributing to the income of their households.

The fact that a significantly high proportion of the total population are children (under 8 years) has to be taken into cognisance while planning infrastructure facilities (especially toilets) to ensure that the specific needs of children are integrated while designing the facilities to ensure access and ease of usage.

## Table 3: Demographic Profile of Settlements Surveyed

| | Adults (> 18 years) | | Youth (8–18 years) | | Children (< 8 years) | | Total Population |
|---|---|---|---|---|---|---|---|
| | Numbers | % | Number | % | Numbers | % | |
| B. D. Patil Nagar (JJ Cluster) | 14,700 | 65.33 | 2,900 | 12.89 | 4,900 | 21.78 | 22,500 |
| Rajeev Nagar (Unauthorised Colony) | 4,830 | 74.42 | 700 | 10.79 | 960 | 14.79 | 6,490 |
| Bhalaswa (Resettlement Colony) | 12,000 | 72.73 | 1,600 | 9.70 | 2,900 | 17.58 | 16,500 |
| Bhalaswa Gaon (Urban Village) | 3,000 | 53.57 | 430 | 7.68 | 2,170 | 38.75 | 5,600 |
| Sanjay Colony (JJ Cluster) | 2,725 | 72.67 | 450 | 12.00 | 575 | 15.33 | 3,750 |
| Bhagat Singh Park (Unauthorised Colony) | 2,100 | 61.76 | 450 | 13.24 | 850 | 25.00 | 3,400 |
| Ambedkar Nagar (Resettlement Colony) | 15,200 | 80.00 | 1,600 | 8.42 | 2,200 | 11.58 | 19,000 |
| Samaipur Gaon (Urban Village) | 10,800 | 54.00 | 2,700 | 13.50 | 6,500 | 32.50 | 20,000 |
| Grand Total | 65,355 | 67.21 | 10,830 | 11.14 | 21,055 | 21.65 | 97,240 |

Estimates based on community consultations

The informal settlements located in the peripheral wards of the city have a low sex ratio. Of the total population covered in the eight informal settlements while 52,220 are males (53.70 %), 45,020 are females (46.30 %). The proportion of females in the total population ranges from 49 per cent in B. D. Patil Nagar (JJ cluster) to as low as 42 per cent in Ambedkar Nagar )resettlement colony).

The population composition of JJ clusters in both the wards reveals a comparatively high sex ratio when compared to other types of informal settlements (females account for 49 and 48 per cent of the total population in B D Patil Nagar and Sanjay Colony respectively). It brings to light the recent trend of entire families migrating to Delhi in search of employment opportunities and better facilities and settling in these peripheral wards. Urban villages have a low sex ratio; females account for 47 and 45 per cent of the total population in Bhalaswa Gaon and Samaipur Gaon respectively. The figures reveal shades of the sex composition of the original rural settlements that reflects a bias against females. In the case of resettlement colonies majority of the families are the ones that had migrated and settled in the city's core long ago and have since been shifted from there to its periphery as part of the massive relocation drives by the government. In a majority of these families a while the males had migrated first their families joined them subsequently. Bhalaswa resettlement colony that was established in 2001–02 has a high sex ratio (49 % of the population are females) while Ambedkar Nagar resettlement colony has only 42 per cent of the total population as females.

### Table 4: Sex Composition of Settlements Surveyed

| | Males | | Females | | Total Population |
|---|---|---|---|---|---|
| | Population | % | Population | % | |
| B. D. Patil Nagar (JJ Cluster) | 11,500 | 51.11 | 11,000 | 48.89 | 22,500 |
| Rajeev Nagar (Unauthorised Colony) | 8,500 | 53.93 | 8,000 | 46.07 | 16,500 |
| Bhalaswa (Resettlement Colony) | 1,950 | 51.52 | 1,800 | 48.48 | 3,750 |
| Bhalaswa Gaon (Urban Village) | 11,000 | 53.04 | 8,000 | 46.96 | 19,000 |
| Sanjay Colony (JJ Cluster) | 3,500 | 52.00 | 2,990 | 48.00 | 6,490 |
| Bhagat Singh Park (Unauthorised Colony) | 2,970 | 52.94 | 2,630 | 47.06 | 5,600 |
| Ambedkar Nagar (Resettlement Colony) | 1,800 | 57.89 | 1,600 | 42.11 | 3,400 |
| Samaipur Gaon (Urban Village) | 11,000 | 55.00 | 9,000 | 45.00 | 20,000 |
| Grand Total | 52,220 | 53.70 | 45,020 | 46.30 | 97,240 |

Estimates based on community consultations

#### 4.1.1.3 Occupational Profile

Majority of the households in the informal settlements surveyed is the head of the household employed. Of these, while majority (70.63%) are self-employed, 43 households (27 %) are employed in the service sector. In only four households (2.5 %) the head of the household is unemployed.

The proportion of households that are self-employed varies from 60 per cent in B. D. Patil Nagar (JJ cluster), Ambedkar Nagar (resettlement colony) and Bhalaswa Gaon (urban village) to 85 per cent in Samaipur Gaon (urban village). The proportion of self-employed households ranges between 60 to 75 per cent in Bhalaswa ward, and is marginally higher in Badli ward (from 60 % to 85 %). The proportion of households employed in the service sector ranges from 10 per cent in Samaipur Gaon (urban village) to 40 per cent in B. D. Patil Nagar (JJ cluster), Bhalaswa Gaon (urban village) and Ambedkar Nagar (resettlement colony). The proportion of households in which the head of the family is unemployed ranges from nil to five per cent in the four settlements.

The survey reveals that a majority of the households (60.63 %) are employed as irregular workers. The proportion of households in irregular employment category ranges from five per cent in Ambedkar Nagar (resettlement colony) to 80 per cent in Bhagat Singh Park (unauthorised colony). The proportion of households in the irregular employment category ranges between 25 to 55 per cent in Bhalaswa ward and is much higher in Badli ward where it ranges from 20 per cent to 95 per cent.

The predominance of irregular workers is evident across all types of informal settlements. Of the eight settlements covered, only Ambedkar Nagar resettlement colony (Badli ward) has only five per cent of its households employed in the irregular category, all other settlements have more than 45 per cent of their households employed in this category. These figures bring to light the uncertainties that majority of the households in informal settlements have to face related to livelihood and monthly earnings. The irregular nature of employment not only limits capacities of households to access basic amenities and facilities through investments in infrastructure but also incapacitates them in mitigating risks and hazards resulting from poor environmental sanitation.

Of the total households surveyed, 59 (36.88 %) have the heads of the families employed in the regular sector. Thus, only a little over one-third of the households surveyed have job security and regularity with respect to income. The proportion of households employed in the regular sector ranges from 10 per cent in Samaipur Gaon (urban village) to 95 per cent in Ambedkar Nagar (resettlement colony).

The type and nature of employment and occupation influences the income of the households and thus the paying capacity of the households for improved housing and services. There is a relatively stronger likelihood that the households whose head are in service or are self-employed under the regular type of employment would be able to afford payment for improved services.

### Table 5: Occupational Profile – Occupation of Head of Households Surveyed

| Informal Settlements | Service | | Self Employed | | Unemployed | |
|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 8 | 40.00 | 12 | 60.00 | 0 | 0.00 |
| Rajeev Nagar (Unauthorised Colony) | 4 | 20.00 | 15 | 75.00 | 1 | 5.00 |
| Bhalaswa (Resettlement Colony) | 5 | 25.00 | 14 | 70.00 | 1 | 5.00 |
| Bhalaswa Gaon (Urban Village) | 8 | 40.00 | 12 | 60.00 | 0 | 0.00 |
| Sanjay Colony (JJ Cluster) | 4 | 20.00 | 15 | 75.00 | 1 | 5.00 |
| Bhagat Singh Park (Unauthorised Colony) | 4 | 20.00 | 16 | 80.00 | 0 | 0.00 |
| Ambedkar Nagar (Resettlement Colony) | 8 | 40.00 | 12 | 60.00 | 0 | 0.00 |
| Samaipur Gaon (Urban Village) | 2 | 10.00 | 17 | 85.00 | 1 | 5.00 |
| Grand Total | 43 | 26.88 | 113 | 70.63 | 4 | 2.50 |

## Key Findings: Population and Demographics

- In the eight informal settlements covered a total of 17,634 households and a total population of 97,240 was recorded. The sample household survey, which covered 160 households across these settlements, revealed a total population of 1,062.
- The large size of JJ clusters and unauthorised colonies encountered in these wards validates the recent trend of migrants settling on the city's periphery as the central areas of the city are 'protected' and do not allow squatting. The agricultural fields and growing number of industrial units/factories that are being shifted from the city's centre to these areas act as a pull factor for people from neighbouring urban and rural centres.
- The peripheral wards of the city have also been witness to a rapid urbanisation of rural villages. Thus, the older rural settlements have acquired urban characteristics after being brought into the city's municipal limits. Over time due to inadequate access to services and amenities these settlements have acquired the status of "informal" settlements.
- The establishment of the resettlement colonies in these wards coincides with the two phases of large-scale resettlement of informal communities in Delhi (1976 and 2001) whereby informal communities were evicted from the city's centre and resettled in far-flung peripheral areas.
- The average family size in the informal settlements covered is five people per family, the inter settlement variations range from four to six persons per family. The family size is the largest in urban villages, which can be attributed to the presence of joint families.
- Of the total population recorded in the informal settlements covered, 67 per cent (65,355) are adults (over 18 years); 11 per cent (10,830) youth (8–18 years) and 22 per cent (21,055) children.
- An analysis of the population composition reveals that approximately one-third of the population of these settlements is dependant (including youth and children). A large family size coupled with a high proportion of dependent population has serious implications on the family's income and their capacities to set aside money for investing in infrastructure services and facilities. However, it is important to acknowledge that in a majority of the families, youth and children are gainfully employed in the informal sector and although they may be earning meagre sums they are contributing to the income of their households.
- Of all the informal settlements, urban villages have the highest proportion of children (under 8 years). The fact that a significantly high proportion of children (under 8 years) in the total population has to be taken into account while planning infrastructure facilities (especially toilets) to ensure that the specific needs of children are integrated while designing the facilities to ensure access and ease of usage.
- The informal settlements located in the peripheral wards of the city have a low sex ratio. Of the total population covered in the eight informal settlements while 52,220 are males (53.70 %), 45,020 are females (46.30 %).
- The population composition of JJ clusters in both the wards reveals a comparatively high sex ratio when compared to other types of informal settlements (females account for 49 and 48 per cent of the total population in B. D. Patil Nagar and Sanjay Colony respectively). It brings to light the recent trend of entire families migrating to Delhi in search of employment opportunities and better facilities and settling in these peripheral wards.
- Urban villages have a low sex ratio; females account for 47 and 45 per cent of the total population in Bhalaswa Gaon and Samaipur Gaon, respectively. The figures show shades of the sex composition of the original rural settlements that have a gender bias.
- In the case of resettlement colonies majority of the families are ones that had migrated into the city long ago and settled in the city's core and have since been shifted from there to the periphery as a part of massive relocation drives by the government. In majority of these families while the males had migrated first their families have joined them subsequently. Bhalaswa resettlement colony, which was established in 2001–02, has a high sex ratio (49 % of the population are females) while in the Ambedkar Nagar resettlement colony only 42 per cent of the total population are females.
- Majority of the households have the head of the household employed. Of these while majority (70.63%) are self-employed, 43 households (27 %) are employed in the service sector and in only four households (2.5 %) the head of the household is unemployed.
- Majority of the households (60.63 %) are employed as irregular workers.
- The predominance of irregular workers is evident across all types of informal settlements. Of the eight settlements covered, only Ambedkar Nagar resettlement colony (Badli ward) has only five per cent of its households employed in the irregular category, all other settlements have more than 45 per cent of their households employed in the irregular category. These figures brings to light the uncertainties that majority of the households in informal settlements have to face related to livelihood and monthly earnings. The irregular type of employment not only limits capacities of households to access basic amenities and facilities through investments in infrastructure but also incapacitates them in mitigating risks and hazards resulting from poor environmental sanitation.

### Table 6: Type of Employment – Employment of the Head of Household

| Informal Settlements | Regular | | Irregular | | Unemployed | |
|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 8 | 40.00 | 12 | 60.00 | 0 | 0.00 |
| Rajeev Nagar (Unauthorised Colony) | 5 | 25.00 | 14 | 70.00 | 1 | 5.00 |
| Bhalaswa (Resettlement Colony) | 5 | 25.00 | 14 | 70.00 | 1 | 5.00 |
| Bhalaswa Gaon (Urban Village) | 11 | 55.00 | 9 | 45.00 | 0 | 0.00 |
| Sanjay Colony (JJ Cluster) | 5 | 25.00 | 14 | 70.00 | 1 | 5.00 |
| Bhagat Singh Park (Unauthorised Colony) | 4 | 20.00 | 16 | 80.00 | 0 | 0.00 |
| Ambedkar Nagar (Resettlement Colony) | 19 | 95.00 | 1 | 5.00 | 0 | 0.00 |
| Samaipur Gaon (Urban Village) | 2 | 10.00 | 17 | 85.00 | 1 | 5.00 |
| **Grand Total** | **59** | **36.88** | **97** | **60.63** | **4** | **2.50** |

## 4.2 Housing

While resettlement colonies and urban villages are 'recognised' informal settlements, JJ clusters and unauthorised colonies lack any kind of legal recognition. The 'recognised' status of the slum ensures protection of the residents from the threat of eviction and also makes it mandatory for the Urban Local Body (ULB) to provide them access to basic services like water supply, toilets, drainage, solid waste collection and roads. In the absence of such a legal sanction, residents of JJ clusters and unauthorised settlements are susceptible to eviction without proper resettlement. This factor has a bearing on the community's readiness to invest towards improving their housing as well as basic amenities.

### 4.2.1 Housing Construction

Majority of the households in informal settlements surveyed have *pucca*[1] type of structures. While 123 households (76.88%) have *pucca* structures, 27 households (16.88%) have *pucca* and *kutcha*[2] type of structures and only 10 houses have *kutcha* [3] structures.

The houses with *kutcha* type of structure (10) are located in JJ clusters (2), unauthorised colonies (2) and resettlement colonies (6). Both JJ clusters and unauthorised colonies lack security of tenure, families do not feel secure to invest in housing and have the presence of *kutcha* houses. However, in case of Bhalaswa resettlement colony, six of the twenty houses surveyed are *kutcha* in nature and majority of these are located on the settlement's periphery and are encroachments rather than original re-settlers.

The predominance of *pucca* structures demonstrates the readiness of slum communities to invest in housing in an attempt to improve their living conditions. While overall there is a high level of readiness to invest in housing the same was more pronounced in case of settlements that have a notified legal status, namely urban villages and resettlement colonies as the residents are secure and do not fear eviction/demolition. This trend clearly establishes the link between the readiness of the slum communities to improve their own living conditions with security of tenure. Thus, if community investments on either housing or infrastructure are sought it is important to ensure security of tenure for the slum dwellers.

[1] Brick and RCC units

[2] ½ Brick wall and Tin A.C Plastic Roof

[3] Tin A.C, Plastic Roof and Walls

## Table 7: Type of Housing Construction

| Informal Settlements | *Pucca* | | *Pucca & Kutcha* | | *Kutcha* | |
|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 12 | 60.00 | 7 | 35.00 | 1 | 5.00 |
| Rajeev Nagar (Unauthorised Colony) | 17 | 85.00 | 1 | 5.00 | 2 | 10.00 |
| Bhalaswa (Resettlement Colony) | 9 | 45.00 | 5 | 25.00 | 6 | 30.00 |
| Bhalaswa Gaon (Urban Village) | 20 | 100.00 | 0 | 0.00 | 0 | 0.00 |
| Sanjay Colony (JJ Cluster) | 6 | 30.00 | 13 | 65.00 | 1 | 5.00 |
| Bhagat Singh Park (Unauthorised Colony) | 19 | 95.00 | 1 | 5.00 | 0 | 0.00 |
| Ambedkar Nagar (Resettlement Colony) | 20 | 100.00 | 0 | 0.00 | 0 | 0.00 |
| Samaipur Gaon (Urban Village) | 20 | 100.00 | 0 | 0.00 | 0 | 0.00 |
| **Grand Total** | **123** | **76.88** | **27** | **16.88** | **10** | **6.25** |

### 4.2.2 Size of Houses

The size of dwelling units within informal settlements is not uniform. In fact there are large scale intra and inter settlement differences. The survey revealed that majority of houses in informal settlements surveyed have a dimensions of 15 feet x 15 feet (225 sq ft) or more. Of the total houses while 78 per cent have a dimension of 15 feet x 15 feet or more, 11 per cent have a dimension of 10 feet x 15 feet, 10 per cent have a dimension of 10 feet x 10 feet and only two per cent have a dimension of less than 10 feet x 10 feet.

JJ clusters have the smallest sizes of dwelling units as compared to other informal settlements. In B. D. Patil Nagar (Bhalaswa ward) 65 per cent of the houses surveyed have a size less than or equal to 10 feet x 10 feet, and in Sanjay Nagar (Badli ward) the proportion of such houses is 30 per cent. In all the other types of informal settlements surveyed, namely, unauthorised colonies, resettlement colonies and urban villages the dimensions of the houses surveyed are more than or equal to 15 feet x 15 feet.

Of the total households 89 per cent families have dwelling units of dimensions equal to or more than 10 feet x 15 feet (corresponding to an area of 150 sq ft). The area available is thus enough for ensuing individual level water supply and individual toilets. If the procedural hurdles are removed, most of these families can opt for individual type of water supply and individual or shared toilets. This will, however, be guided and controlled by social and technical factors. The social factors include family size, dwelling unit size, space person ratio, amount of space the family can spare and their readiness to use it for construction of individual toilets. On the other hand, technical factors would include proximity to water line, sewer line, levels and alignment of the land on which the house and or settlement is located. Only 19 houses (12%) have a dimension of less than 10 feet x 15 feet, all of which are located in JJ clusters, do not have enough space for the provision of individual level water and sanitation facilities.

## Table 8: Area of Houses

| Informal Settlements | <10'x10' | | 10'x 10' | | 10' x 15' | | < 15 'x 15' | |
|---|---|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 3 | 15.00 | 10 | 50.00 | 5 | 25.00 | 2 | 10.00 |
| Rajeev Nagar (Unauthorised Colony) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| Bhalaswa (Resettlement Colony) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| Bhalaswa Gaon (Urban Village) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| Sanjay Colony (JJ Cluster) | 0 | 0.00 | 6 | 30.00 | 12 | 60.00 | 2 | 10.00 |
| Bhagat Singh Park (Unauthorised Colony) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| Ambedkar Nagar (Resettlement Colony) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| Samaipur Gaon (Urban Village) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| **Grand Total** | **3** | **1.88** | **16** | **10.00** | **17** | **10.63** | **124** | **77.50** |

### 4.2.3 Number of Rooms

A little over half of the households surveyed (51.25%) have more than two rooms in their dwelling units. While 29 per cent of the houses have only one-room tenements, twenty per cent have two rooms.

## Table 9: Number of Rooms

| Informal Settlements | One Room | | Two Rooms | | More than 2 Rooms | |
|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 17 | 85.00 | 2 | 10.00 | 1 | 5.00 |
| Rajeev Nagar (Unauthorised Colony) | 2 | 10.00 | 5 | 25.00 | 13 | 65.00 |
| Bhalaswa (Resettlement Colony) | 11 | 55.00 | 9 | 45.00 | 0 | 0.00 |
| Bhalaswa Gaon (Urban Village) | 0 | 0.00 | 7 | 35.00 | 13 | 65.00 |
| Sanjay Colony (JJ Cluster) | 15 | 75.00 | 5 | 25.00 | 0 | 0.00 |
| Bhagat Singh Park (Unauthorised Colony) | 0 | 0.00 | 2 | 10.00 | 18 | 90.00 |
| Ambedkar Nagar (Resettlement Colony) | 1 | 5.00 | 1 | 5.00 | 18 | 90.00 |
| Samaipur Gaon (Urban Village) | 0 | 0.00 | 1 | 5.00 | 19 | 95.00 |
| **Grand Total** | **46** | **28.75** | **32** | **20.00** | **82** | **51.25** |

Just like the size of dwelling unit, the number of rooms is also directly related to the type of settlement and the security of tenure. JJ clusters predominantly have one-room tenements. B. D. Patil Nagar in Bhalaswa ward has 85 per cent of the houses surveyed as one-room tenements and Sanjay Colony in Badli ward has 75 per cent houses as one-room tenements. Majority of the houses in unauthorised colonies have tenements with more than two rooms,

Rajeev Nagar in Bhalaswa ward has 65 per cent of the houses surveyed as tenements with more than two rooms, while a vast majority (90%) of houses in Bhagat Singh Park in Badli ward have more than two rooms. The same trend is observed in the two urban villages surveyed. The proportion of houses with more than two rooms varies from 65 per cent in Bhalaswa Gaon to 90 per cent in Samaipur Gaon.

There is a direct relationship between the size of the house and the number of rooms that ensure segregation of use. Majority of the houses with a dimensions of less than or equal to 10 feet x 15 feet have only one room and thus a lower level of segregation of use. Only four houses with dimensions of 10 feet x 15 feet have two rooms. The houses with a dimension of 15 feet x 15 feet or more have a high proportion of houses with more than two rooms (66.13%). The big size of the dwelling unit facilitates the provision of more rooms and also facilitates a relatively higher level of segregation of use, namely, kitchen, sleeping area, bathrooms and toilets.

**Table 10: Size of the House and Segregation of Use (Number of Rooms)**

| Size of the House | Number of Rooms | | | | | |
|---|---|---|---|---|---|---|
| | One room | | Two rooms | | More than two rooms | |
| | No. of HHs | % of HHs | No. of HHs | % of HHs | No. of HHs | % of HHs |
| <10 x 10 | 3 | 100.00 | 0 | 0 | 0 | 0 |
| 10 x 10 | 16 | 100.00 | 0 | 0 | 0 | 0 |
| 10 x 15 | 13 | 76.47 | 4 | 23.53 | 0 | 0 |
| 15 x 15 above | 14 | 11.29 | 28 | 22.58 | 82 | 66.13 |
| **Grand Total** | **46** | **28.75** | **32** | **20** | **82** | **51.25** |

### 4.2.4 Floors in Houses

The houses in informal settlements are predominantly at the ground level. While majority (109, 68.13%) of the houses are at ground level a sizeable proportion of houses (40, 25%) are at Ground + 1[4] level. Only 11 households have houses with G + 2 or more floors of which six are located in Bhalaswa Gaon (urban village), three in Samaipur Gaon and one each in Rajeev Nagar (unauthorised colony) and Ambedkar Nagar (resettlement colony).

### 4.2.5 Use of the House

A vast majority of the houses are being used exclusively for residential purposes. Of the 160 households surveyed in eight informal settlements, 141 (88.13%) are used exclusively for residential purposes. Only 19 houses (11.88%) have shops or other commercial establishments within houses.

[4] Ground and One Floor

## Table 11: Number of Floors

| Informal Settlements | Ground | | G + 1 | | G + 2 | | More than G + 2 | |
|---|---|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 18 | 90.00 | 2 | 10.00 | 0 | 0.00 | 0 | 0.00 |
| Rajeev Nagar (Unauthorised Colony) | 16 | 80.00 | 3 | 15.00 | 1 | 5.00 | 0 | 0.00 |
| Bhalaswa (Resettlement Colony) | 19 | 95.00 | 1 | 5.00 | 0 | 0.00 | 0 | 0.00 |
| Bhalaswa Gaon (Urban Village) | 5 | 25.00 | 9 | 45.00 | 5 | 25.00 | 1 | 5.00 |
| Sanjay Colony (JJ Cluster) | 16 | 80.00 | 4 | 20.00 | 0 | 0.00 | 0 | 0.00 |
| Bhagat Singh Park (Unauthorised Colony) | 18 | 90.00 | 2 | 10.00 | 0 | 0.00 | 0 | 0.00 |
| Ambedkar Nagar (Resettlement Colony) | 5 | 25.00 | 14 | 70.00 | 1 | 5.00 | 0 | 0.00 |
| Samaipur Gaon (Urban Village) | 12 | 60.00 | 5 | 25.00 | 3 | 15.00 | 0 | 0.00 |
| **Grand Total** | **109** | **68.13** | **40** | **25.00** | **10** | **6.25** | **1** | **0.63** |

## Key Findings: Housing

- While resettlement colonies and urban villages are 'recognised' informal settlements, JJ clusters and unauthorised colonies lack any kind of legal recognition. The 'recognised' status of the slum ensures protection of the residents from the threat of eviction and also makes it mandatory for the urban local body (ULB) to provide them access to basic services. In the absence of such a legal sanction residents of JJ clusters and unauthorised settlements are susceptible to eviction without proper resettlement. This has a direct bearing on the community's readiness to invest in housing as well as basic amenities.
- Majority (76.88%) of the households surveyed have *pucca* type of structures. The predominance of *pucca* structures demonstrates the readiness of slum communities to invest in housing in an attempt to improve their living conditions. While overall there is a high level of readiness to invest in housing the same is more pronounced in case of settlements that have a notified legal status, namely urban villages and resettlement colonies as the residents are secure and do not fear eviction/demolition. This clearly establishes the link between readiness of the slum communities to improve their own living conditions in presence of security of tenure.
- Only 10 houses have *kutcha* structures and these are located in JJ clusters, unauthorised colonies and on the fringes of resettlement colonies that are largely encroachments. Due to lack of security of tenure these families are not ready to invest in housing.
- Majority of the houses in informal settlements surveyed have a dimensions of 15 feet x 15 feet (225 sq ft) or more. JJ clusters have the smallest sizes of dwelling units with large proportions of the houses having dimensions of 10 feet x 10 feet. In all other types of informal settlements, namely, unauthorised colonies, resettlement colonies and urban villages the dimensions of the houses surveyed are more than or equal to 15 feet x 15 feet.
- Of the total houses surveyed, 89 per cent families have dwelling units of dimensions equal to or more than 10 feet x 15 feet (corresponding to an area of 150 sq ft). The area available is thus enough for ensuring individual level water supply and individual toilets.
- A little over half of the households surveyed (51.25%) have more than two rooms in their dwelling units.
- The houses in informal settlements are predominantly at the ground level. While majority (109, 68.13%) of the houses are at ground level a sizeable proportion of houses (40, 25%) are at Ground + 1 level. Only 11 households have houses with G + 2 or more floors.
- There is a direct relationship between the size of the house and the number of rooms that ensure segregation of use. Majority of the houses with a dimensions of less than or equal to 10 feet x 15 feet have only one room and thus a lower level of segregation of use
- The nature of construction, size of dwelling units, number of rooms and floors are directly related with the type of informal settlements and the presence/absence of tenure security. JJ clusters predominantly have small, one-room tenements largely at the ground level. Unauthorised colonies are slightly better off than JJ cluster on these housing related variables. Of all the informal settlements, urban villages and resettlement colonies, fare much better with respect to the nature and condition of housing.

### Table 12: Use of the House

| Informal Settlements | Residential | | Residential + Commercial | |
|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 20 | 100.00 | 0 | 0.00 |
| Rajeev Nagar (Unauthorised Colony) | 16 | 80.00 | 4 | 20.00 |
| Bhalaswa (Resettlement Colony) | 19 | 95.00 | 1 | 5.00 |
| Bhalaswa Gaon (Urban Village) | 17 | 85.00 | 3 | 15.00 |
| Sanjay Colony (JJ Cluster) | 19 | 95.00 | 1 | 5.00 |
| Bhagat Singh Park (Unauthorised Colony) | 17 | 85.00 | 3 | 15.00 |
| Ambedkar Nagar (Resettlement Colony) | 13 | 65.00 | 7 | 35.00 |
| Samaipur Gaon (Urban Village) | 20 | 100.00 | 0 | 0.00 |
| **Grand Total** | **141** | **88.13** | **19** | **11.88** |

Majority of the houses that are being used for residential and commercial purposes are those that have more than two rooms and an area of more than or equal to 225 sq feet.

### Table 13: Use of the House and Number of Rooms

| Number of Rooms | Type of Use of the house | | | |
|---|---|---|---|---|
| | Residential | | Residential + Commercial | |
| | Number of HHs | % of HHs | Number of HHs | % of HHs |
| One Room | 46 | 100.00 | 0 | 0.00 |
| Two Rooms | 27 | 84.38 | 5 | 15.63 |
| More than two rooms | 68 | 82.93 | 14 | 17.07 |
| Grand Total | 141 | 88.13 | 18 | 11.25 |

## 4.3 Level of Provision of Infrastructure Facilities

### 4.3.1 Water Supply

The main sources of water supply in Bhalaswa and Badli wards are as follows:

- Delhi Jal Board pipeline (Haiderpur water plant)
- Delhi Jal Board tubewell (from Jhangola water works)
- Delhi Jal Board handpump
- Delhi Jal Board tankers
- Delhi Jal Board booster pumps
- Personal handpump

The nature of provision, level of access and the quality of water supply vary with the type of settlement. The formal and regularised settlements have individual level water supply with metered connections. With respect to informal settlements, while urban villages have access to individual level water supply from Delhi Jal Board (DJB); resettlement colonies and JJ clusters have access to community level water supply provided by DJB; and unauthorised colonies have no access to water supply and depend on handpumps and tankers for water.

#### 4.3.1.1 Type of Water Supply

Majority of the households in informal settlements covered by this study (58%) depend on community level sources of water including community standposts, handpumps, and tankers either independently or in conjunction with each other.

A sizeable proportion of households (38, 23.75%) have individual household level water supply. In a majority of these households, individual connections are a result of community's initiative by extending community level water pipelines to their houses. The households have borne the entire expenditure for extending the pipes and for installation of water taps, which has been in the range of Rs 1000 to Rs 5000 per family. This demonstrates the desire of communities to have individual level water supply and their readiness to pay for improved services.

In urban villages, the main sources of water supply are piped water supply by DJB and handpumps. A sizeable proportion of households in urban villages have access to individual level water supply connections (85 % in Bhalaswa Gaon; 45 % in Samaipur Gaon – the remaining households access water through handpumps and tankers). In the case of unauthorised colonies the main sources of water supply are handpumps and tankers, in Rajeev Nagar (Bhalaswa ward) majority of the households depend on handpumps and tankers for water supply and in Bhagat Singh Park (Badli ward) all households depend exclusively on handpumps for water supply. In JJ clusters and resettlement colonies there is a predominance of community standposts as water supply sources.

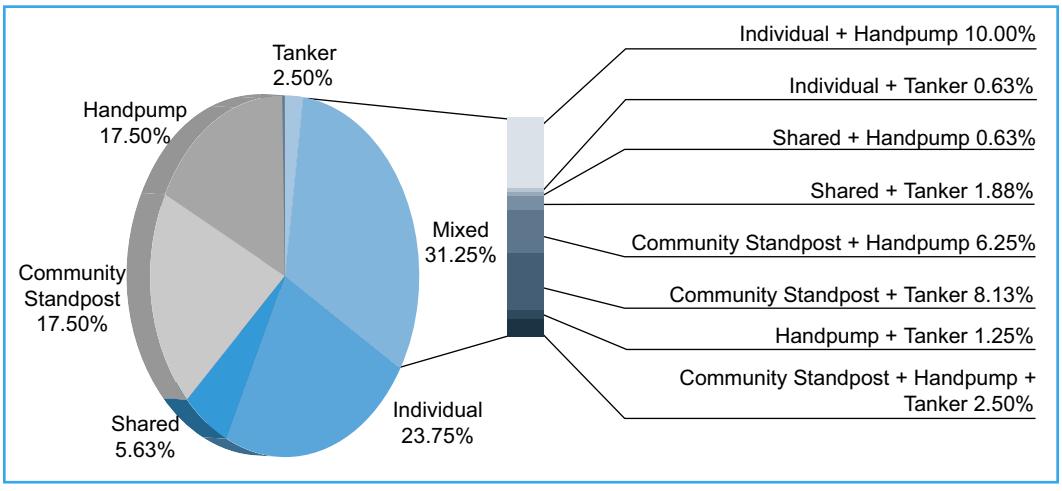
Focus group discussions (FGDs) with slum communities that have access to only community level water sources revealed a high level of aspiration to have individual household level water connections. This is also reflected in a large number of households extending the water pipes till their houses in an attempt to have household level supply.

**Table 14: Type of Water Supply to Households**

| Informal Settlements | Individual | | Shared | | Community Stand-post | | Handpump | | Tanker | | Mixed[5] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 2 | 10.00 | 5 | 25.00 | 7 | 35.00 | 0 | 0.00 | 0 | 0.00 | 6 | 30.00 |
| Rajeev Nagar (Unauthorised Colony) | 0 | 0.00 | 0 | 0.00 | 2 | 10.00 | 0 | 0.00 | 4 | 20.00 | 14 | 70.00 |
| Bhalaswa (Resettlement Colony) | 0 | 0.00 | 0 | 0.00 | 8 | 40.00 | 0 | 0.00 | 0 | 0.00 | 12 | 60.00 |
| Bhalaswa Gaon (Urban Village) | 17 | 85.00 | 0 | 0.00 | 1 | 5.00 | 0 | 0.00 | 0 | 0.00 | 2 | 10.00 |
| Sanjay Colony (JJ Cluster) | 0 | 0.00 | 4 | 20.00 | 13 | 65.00 | 0 | 0.00 | 0 | 0.00 | 3 | 15.00 |
| Bhagat Singh Park (Unauthorised Colony) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 | 0 | 0.00 | 0 | 0.00 |
| Ambedkar Nagar (Resettlement Colony) | 10 | 50.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 10 | 50.00 |
| Samaipur Gaon (Urban Village) | 9 | 45.00 | 0 | 0.00 | 0 | 0.00 | 8 | 40.00 | 0 | 0.00 | 3 | 15.00 |
| Grand Total | 38 | 23.75 | 9 | 5.63 | 31 | 19.38 | 28 | 17.50 | 4 | 2.50 | 50 | 31.25 |

[5] Indicates water supply through more than one source of water. This head includes the following combination of water supply sources: Individual connections + Handpump; Individual connections + Tanker; Shared connections + Handpump; Shared connections + Tanker; Community Standpost + Handpump; Community Standpost + Tanker; Handpump + tanker; Community Standpost + Handpump +Tanker

**Figure 1: Sources of Water Supply**




#### 4.3.1.2 Duration of Water Supply

The duration of water supply has a direct bearing on the environmental sanitation conditions in informal communities. The duration of water supply influences the amount of water available per household. As majority of the household activities are dependent on the amount of water available. The level of cleanliness and the operation of sanitation facilities like toilets and drainage are directly affected by the duration and quantity of water supply. Further, the amount of water available influences the level of personal hygiene and cleanliness.

The duration of water supply in informal settlements ranges from less than one hour to ten hours in a day. Majority of the households (83, 51.88%) receive water supply for three to five hours. Another 26 (16.25%) of households receive water supply for one to three hours a day. Twenty three per cent (36%) of the households surveyed receive water supply for more than or equal to ten hours a day. Only five households (3.13%) receive water for less than one hour in a day.

Almost all the households surveyed in JJ clusters in both Badli and Bhalaswa ward receive water supply for one to five hours a day. In the unauthorised colony of Rajeev Nagar (Bhalaswa ward) the duration of water supply for households accessing community level water sources ranges from three to ten hours. In this colony four households depend exclusively on tankers for water supply and there is no fixed timing or duration for the supply. In Bhagat Singh Park unauthorised colony located in Badli ward, all households surveyed depend exclusively on handpumps for water supply, thus the duration is reflected as 24 hours.

In resettlement colonies, majority of the households receive water supply for one to five hours. In Bhalaswa resettlement colony 95 per cent of the households receive water for three to five hours a day and only one household receives water for one to three hours a day. In the case of Ambedkar Nagar while 20 per cent of the households surveyed receive water supply for less than one hour a day, the remaining households receive water supply for one to three hours in a day.

Urban villages fare much better than other informal settlements when it comes to access and duration of water supply; a sizeable proportion of the households surveyed receive water supply for more than or equal to ten hours a day. In Bhalaswa Gaon (Bhalaswa ward) 35 per cent of the households surveyed receive water supply for more than ten hours a day. The proportion is marginally higher at 40 per cent in Samaipur Gaon (Badli ward).

## Table 15: Duration of Water Supply to Households

| Informal Settlements | Less than 1 hour | | One to 3 hours | | 3 to 5 hours | | 5 to 10 hours | | More than ten hours | | More than ten hours + tanker | | NA (Only Tanker) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. of HHs | % of HHs | No. of HHs | % of HHs | No. of HHs | % of HHs | No. of HHs | % of HHs | No. of HHs | % of HHs | No. of HHs | % of HHs | No. of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 1 | 5.00 | 8 | 40.00 | 11 | 55.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Rajeev Nagar (Unauthorised Colony) | 0 | 0.00 | 0 | 0.00 | 12 | 60.00 | 4 | 20.00 | 0 | 0.00 | 0 | 0.00 | 4 | 20.00 |
| Bhalaswa (Resettlement Colony) | 0 | 0.00 | 1 | 5.00 | 19 | 95.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Bhalaswa Gaon (Urban Village) | 0 | 0.00 | 2 | 10.00 | 8 | 40.00 | 3 | 15.00 | 7 | 35.00 | 0 | 0.00 | 0 | 0.00 |
| Sanjay Colony (JJ Cluster) | 0 | 0.00 | 2 | 10.00 | 18 | 90.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Bhagat Singh Park (Unauthorised Colony) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 | 0 | 0.00 |
| Ambedkar Nagar (Resettlement Colony) | 4 | 20.00 | 12 | 60.00 | 4 | 20.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Samaipur Gaon (Urban Village) | 0 | 0.00 | 1 | 5.00 | 11 | 55.00 | 0 | 0.00 | 8 | 40.00 | 0 | 0.00 | 0 | 0.00 |
| **Grand Total** | **5** | **3.13** | **26** | **16.25** | **83** | **51.88** | **7** | **4.37** | **15** | **9.37** | **20** | **12.50** | **4** | **2.50** |

### 4.3.1.3 Time taken to Access Water Supply

The time taken to access water supply points depends on the type of provision. While communities dependent on community level sources of water supply including community stand-posts, handpumps and tankers have to spend a long hours accessing and collecting water, households with access to individual household level water supply do not have to waste their time collecting water.

Of the 160 households covered by the survey, 38 (23%) have access to individual level water supply and thus do not spend any time in accessing water supply. These households are located in urban villages, resettlement colony of Badli ward and a few households in the JJ cluster of Bhalaswa ward.

The time taken to access water supply points in informal communities, which have access to only community level sources of water supply, ranges from less than 15 minutes to more than one hour. A large proportion of the households (66, 41%) spend 15 to 30 minutes to access the water supply point closest to their homes. Twenty-four households (15%) spend between 30 minutes to one hour to reach the closes water supply points. Twelve households (7.5%) have to spend more than one hour to access water supply. Only twenty households (12.5%) spend less than 15 minutes to access the water supply points.

Discussions with communities revealed that the task of collecting water is the responsibility of women and children who spend a lot of their daily time in this chore. To meet the requirements of water in slums with community level water supply several trips to the water source have to be made. Women who are largely involved in this activity complained of breathlessness, body and back ache. Apart from physical hardships they waste economically productive time in collecting water and in many instances have to buy water at astronomically high prices.

## Table 16: Time taken to Access Water Supply

| Informal Settlements | Individual Supply | | Less than 15 minutes | | 15 to 30 minutes | | 30 minutes to 1 hour | | More than one hour | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 2 | 10.00 | 4 | 20.00 | 11 | 55.00 | 3 | 15.00 | 0 | 0.00 |
| Rajeev Nagar (Unauthorised Colony) | 0 | 0.00 | 1 | 5.00 | 8 | 40.00 | 5 | 25.00 | 6 | 30.00 |
| Bhalaswa (Resettlement Colony) | 0 | 0.00 | 2 | 10.00 | 12 | 60.00 | 4 | 20.00 | 2 | 10.00 |
| Bhalaswa Gaon (Urban Village) | 17 | 85.00 | 1 | 5.00 | 1 | 5.00 | 1 | 5.00 | 0 | 0.00 |
| Sanjay Colony (JJ Cluster) | 0 | 0.00 | 1 | 5.00 | 11 | 55.00 | 7 | 35.00 | 1 | 5.00 |
| Bhagat Singh Park (Unauthorised Colony) | 0 | 0.00 | 0 | 0.00 | 13 | 65.00 | 4 | 20.00 | 3 | 15.00 |
| Ambedkar Nagar (Resettlement Colony) | 10 | 50.00 | 9 | 45.00 | 1 | 5.00 | 0 | 0.00 | 0 | 0.00 |
| Samaipur Gaon (Urban Village) | 9 | 45.00 | 2 | 10.00 | 9 | 45.00 | 0 | 0.00 | 0 | 0.00 |
| **Grand Total** | **38** | **23.75** | **20** | **12.50** | **66** | **41.25** | **24** | **15.00** | **12** | **7.50** |

#### 4.3.1.4 Level of Satisfaction of Slum Communities with Water Supply

Of the total households surveyed majority (89; 55.23%) of the households are not at all satisfied with the quality of water supply.

Quality of water was identified as a problem in almost all communities in the course of the focus group discussions. Majority of the communities reported that the initial supply of water was contaminated. The coping mechanisms however, differed from community to community with some communities who have access to adequate water dispose the water while others strain and boil it. The alternate use of the contaminated water thus depends largely on the availability of water. The parallel alignments of water lines, drainage, and storm water drainage and in cases sewerage were identified as reasons for contamination. Communities also complained of water pipes being corroded and thus more susceptible to leakages and contamination. Though the communities reported that their families fell ill very frequently they were unable to link the fever with diseases. In the interaction, diseases such as jaundice, hepatitis, dysentery, and diarrhea were identified by communities as the frequent diseases due to poor quality of water.

### Table 17: Level of Satisfaction with Quality of Water Supply

| Informal Settlements | Satisfied | | Fairly Satisfied | | Not satisfied | |
|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 1 | 5.00 | 3 | 15.00 | 16 | 80.00 |
| Rajeev Nagar (Unauthorised Colony) | 4 | 20.00 | 2 | 10.00 | 14 | 70.00 |
| Bhalaswa (Resettlement Colony) | 8 | 40.00 | 1 | 5.00 | 11 | 55.00 |
| Bhalaswa Gaon (Urban Village) | 6 | 30.00 | 3 | 15.00 | 11 | 55.00 |
| Sanjay Colony (JJ Cluster) | 0 | 0.00 | 3 | 15.00 | 17 | 85.00 |
| Bhagat Singh Park (Unauthorised Colony) | 14 | 70.00 | 2 | 10.00 | 4 | 20.00 |
| Ambedkar Nagar (Resettlement Colony) | 20 | 100.00 | 0 | 0.00 | 0 | 0.00 |
| Samaipur Gaon (Urban Village) | 3 | 15.00 | 1 | 5.00 | 16 | 80.00 |
| **Grand Total** | **56** | **35.00** | **15** | **9.38** | **89** | **55.63** |

The households with individual type of supply evoking a higher level of satisfaction than community level provisions. The slum households that has access to water supply through individual connections has the highest proportion of population being satisfied among all the water supply types. The slum communities, which have, access to water supply through community level water supply systems, namely, community standposts appear to be fairly satisfied with water supply.

The focus group discussions with slum households revealed that the level of satisfaction with water supply is dependent on the type of provision, duration, quantity and quality of water supplied. The Focus Group Discussions revealed that the level of satisfaction with the amount of water received per household is very low. While the duration of water supply is an issue, the low pressure at which the water is being supplied was rated as a serious issue. To cope with low pressure of water, in some communities households have installed electric motors. Due to no surety of water supply the communities fill and store water in large drums, buckets and containers that reduce the living space within the home.

#### 4.3.1.5 Payment for Water Supply

The household survey revealed that of the total 160 houses surveyed 31.25 per cent (50 households) pay for the water supply. Of the different types of informal settlements covered in this study majority of the households in urban villages in both wards pay for the water supply. Of the other type of informal settlements, only in Ambedkar Nagar, a resettlement colony of Badli ward 100 per cent of the households pay for the water supply.

In Bhalaswa ward while none of the households surveyed in JJ cluster (B. D. Patil Nagar), unauthorised colony (Rajeev Nagar) and resettlement colony (Bhalaswa) make payment for water supply, majority of the households surveyed (18, 90%) in the urban village (Bhalaswa Gaon) make payment for water. In Badli ward, all households in the resettlement colony (Ambedkar Nagar) and majority of the households surveyed in the urban village (Samaipur Gaon) pay for the water supply.

## Table 18: Payment for Water Supply

| Informal Settlements | Payment Made | | No payment made | |
|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 0 | 0.00 | 20 | 100.00 |
| Rajeev Nagar (Unauthorised Colony) | 0 | 0.00 | 20 | 100.00 |
| Bhalaswa (Resettlement Colony) | 0 | 0.00 | 20 | 100.00 |
| Bhalaswa Gaon (Urban Village) | 18 | 90.00 | 2 | 10.00 |
| Sanjay Colony (JJ Cluster) | 0 | 0.00 | 20 | 100.00 |
| Bhagat Singh Park (Unauthorised Colony) | 0 | 0.00 | 20 | 100.00 |
| Ambedkar Nagar (Resettlement Colony) | 20 | 100.00 | 0 | 0.00 |
| Samaipur Gaon (Urban Village) | 12 | 60.00 | 8 | 40.00 |
| **Grand Total** | **50** | **31.25** | **110** | **68.75** |

Of the households paying for water supply (50), majority (29) are paying more than Rs 40 per month. In Bhalaswa Gaon of the 18 households that pay for the water supply, nine (50%) make a payment ranging between Rs 21 to 30 per month and the remaining nine households pay more than Rs 41 per month for water supply. All the households that pay for the water supply make the payment to the Delhi Jal Board.

While the current level and rate of payment for water supply is quite low, the readiness of communities to pay for improved services came out quite strongly during the FGDs.

## Table 19: Amount of Payment for Water Supply

| Informal Settlements | Rs 21 to Rs 30 | | Rs 31 – Rs 40 | | More than Rs 40 | |
|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Rajeev Nagar (Unauthorised Colony) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Bhalaswa (Resettlement Colony) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Bhalaswa Gaon (Urban Village) | 9 | 45.00 | 0 | 0.00 | 9 | 45.00 |
| Sanjay Colony (JJ Cluster) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Bhagat Singh Park (Unauthorised Colony) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Ambedkar Nagar (Resettlement Colony) | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| Samaipur Gaon (Urban Village) | 1 | 5.00 | 11 | 55.00 | 0 | 0.00 |
| **Grand Total** | **10** | **6.25** | **11** | **6.88** | **29** | **18.13** |

### 4.3.2 Toilets

#### 4.3.2.1 Type of Toilet Facilities – Adults

The household survey in the ward reveals that majority (62%) of the adult population is dependent on individual toilet facilities for their sanitation needs. Community toilet facilities have also emerged as a sanitation facility used by the adults in the slums with 18 per cent of the adult population dependent on this type of facility.

This study clearly reveals that in JJ clusters, households largely depend on community level toilet facilities for their sanitation needs and due to absence/inadequate provisions/poor maintenance rendering the facility useless they have to resort to defecation in the open. Of the two unauthorised colonies covered under this study, while Rajeev Nagar (Bhalaswa ward) shows dependence on community toilets, in Bhagat Singh Park (Badli ward) all the households surveyed have individual toilets. In all the other categories of settlements, namely, resettlement colony and urban village, majority of the households have access to individual level toilet facilities.

In 28 households (17.50%) adults have to defecate in the open due to lack of access to toilet facilities, while majority of these are households located in JJ clusters some are also found in other three types of informal settlements.

**Table 20: Agency to which Payment is Made**

| Informal Settlements | Delhi Jal Board | | No payment made | |
|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 0 | 0.00 | 20 | 100.00 |
| Rajeev Nagar (Unauthorised Colony) | 0 | 0.00 | 20 | 100.00 |
| Bhalaswa (Resettlement Colony) | 0 | 0.00 | 20 | 100.00 |
| Bhalaswa Gaon (Urban Village) | 18 | 90.00 | 2 | 10.00 |
| Sanjay Colony (JJ Cluster) | 0 | 0.00 | 20 | 100.00 |
| Bhagat Singh Park (Unauthorised Colony) | 0 | 0.00 | 20 | 100.00 |
| Ambedkar Nagar (Resettlement Colony) | 20 | 100.00 | 0 | 0.00 |
| Samaipur Gaon (Urban Village) | 12 | 60.00 | 8 | 40.00 |
| **Grand Total** | **50** | **31.25** | **110** | **68.75** |

## Key Findings: Water

- Majority of the households in the informal settlements (58%) depend on community level sources of water including community standposts, handpumps, and tankers, either independently or in conjunction with each other.
- A sizeable proportion of households (38, 23.75%) have individual household level water supply. In majority of these households, individual connections are a result of community's initiative by extending community level water pipelines to their houses.
- In urban villages, the main sources of water supply are piped water supply by DJB and handpumps. A sizeable proportion of households in urban villages have access to individual level water supply connections (85 % in Bhalaswa Gaon; 45 % in Samaipur Gaon).
- In unauthorised colonies the main sources of water are handpumps and tankers. In Rajeev Nagar (Bhalaswa ward) majority of the households depend on handpumps and tankers for water supply and in Bhagat Singh Park (Badli ward) all households depend exclusively on handpumps for water supply.
- In JJ clusters and resettlement colonies there is a predominance of community stand-posts as water supply sources.
- The communities that have access to only community level water sources revealed a high level of aspiration to have individual household level water connections.
- The duration of water supply in informal settlements ranges from less than one hour to ten hours a day. Majority of the households (83, 51.88%) receive water supply for three to five hours.
- JJ clusters in both Badli and Bhalaswa ward receive water supply for one to five hours a day. In the unauthorised colony of Rajeev Nagar (Bhalaswa ward) the duration of water supply for households accessing community level water sources ranges from three to ten hours.
- In resettlement colonies, majority of the households receive water supply for one to five hours.
- Only households that access water through handpumps have access to water supply throughout the day but the quality of water is highly unreliable and not potable.
- The time taken to access water supply points depends on the type of provision. While communities dependent on community level sources of water supply including community standposts, handpumps and tankers have to spend long hours accessing and collecting water, households with access to individual household level water supply do not have to waste their time collecting water.
- The time taken to access water supply points in informal communities, which have access to only community level sources of water supply, ranges from less than 15 minutes to more than one hour. A large proportion of the households (66, 41%) spend 15 to 30 minutes to access water supply point closest to their homes. Only 20 households (12.5%) spend less than 15 minutes to access the water supply points.
- Discussions with communities revealed that the task of collecting water is the responsibility of women and children who spend a lot of their daily time in this chore. To meet the requirements of water several trips have to be made to the water source and women complained of breathlessness, body and backache. Apart from physical hardships they waste economically productive time in collecting water and in many instances have to buy water at astronomically high prices.
- Quality of water was identified as a problem in almost all communities during the Focus Group Discussions. Majority of the communities reported that the initial supply of water was contaminated. The coping mechanisms however, differed from community to community. Some communities who have access to adequate water supply dispose the water while others strain and boil it. The parallel alignments of water lines, drainage, and storm water drainage and in cases sewerage were identified as reasons for contamination. Communities also complained of water pipes being corroded and thus more susceptible to leakages and contamination.
- Very few households are currently making payment for water supply although there is a high level of readiness (as revealed in FGDs) to pay if improved services are ensured

## Table 21: Toilet Facilities – Adults

| Informal Settlements | Individual | | Community | | Open | | Community Toilets + Open Area | |
|---|---|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 0 | 0.00 | 18 | 90.00 | 2 | 10.00 | 0 | 0.00 |
| Rajeev Nagar (Unauthorised Colony) | 19 | 95.00 | 1 | 5.00 | 0 | 0.00 | 0 | 0.00 |
| Bhalaswa (Resettlement Colony) | 4 | 20.00 | 10 | 50.00 | 2 | 10.00 | 4 | 20.00 |
| Bhalaswa Gaon (Urban Village) | 18 | 90.00 | 0 | 0.00 | 2 | 10.00 | 0 | 0.00 |
| Sanjay Colony (JJ Cluster) | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 | 0 | 0.00 |
| Bhagat Singh Park (Unauthorised Colony) | 20 | 100.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Ambedkar Nagar (Resettlement Colony) | 19 | 95.00 | 0 | 0.00 | 1 | 5.00 | 0 | 0.00 |
| Samaipur Gaon (Urban Village) | 19 | 95.00 | 0 | 0.00 | 1 | 5.00 | 0 | 0.00 |
| Grand Total | 99 | 61.88 | 29 | 18.13 | 28 | 17.50 | 4 | 2.50 |

### 4.3.2.2 Type of Toilet Facilities – Children

The household survey in the ward reveals that majority (62%) of the child population is dependent on individual toilet facilities for their sanitation needs. In 26.35 per cent households children defecate in the open. In only five per cent the households children use community toilets as a sanitation facility.

In unauthorised colonies (Rajeev Nagar in Bhalaswa ward and Bhagat Singh Park in Badli ward) and urban villages (Bhalaswa Gaon and Samaipur Gaon) children use individual household level toilet facilities. In the resettlement colony of Badli ward (Ambedkar Nagar) while majority of the children make use of individual household level toilets, in Bhalaswa ward (Bhalaswa resettlement colony) majority of the children defecate in the open or access community toilet facilities. Due to the absence of community level toilet facilities, as is the case in Sanjay Colony (Badli ward) or due to the lack of child-specific toilet facilities, as is the case in B. D. Patil Nagar, majority of the children in JJ clusters resort to defecation in the open.

**Problems Related to Toilet Facilities – Children's Perspective**

In the absence of child-specific toilet facilities, the children in slum settlements defecate in the open, on *nallas*, outside toilet blocks, in by lanes and outside the house, anywhere but in the toilet block.

The reasons for children not using public toilets are many and the following came up during interactions with children as a part of the FGDs:

- The hole in the toilet seat is very large and there is a myth that children have fallen through the hole
- Young children cannot control the urgency to defecate and therefore squat in the open
- The toilets are often dark and the children are scared to enter them
- Mothers supervise the defecation while engaged in household chores, so the child sits on the *nalla* near the home
- Children waiting in queues at the toilet blocks are bullied by the adults

## Table 22: Type of Toilet Facilities used by Children

| Informal Settlements | Individual | | Community Toilets | | Open Area | | Drains | | NA | | Mixed | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 0 | 0.00 | 2 | 10.00 | 10 | 50.00 | 1 | 5.00 | 0 | 0.00 | 7 | 35.00 |
| Rajeev Nagar (Unauthorised Colony) | 19 | 95.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 5.00 |
| Bhalaswa (Resettlement Colony) | 4 | 20.00 | 6 | 30.00 | 10 | 50.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Bhalaswa Gaon (Urban Village) | 18 | 90.00 | 0 | 0.00 | 2 | 10.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Sanjay Colony (JJ Cluster) | 0 | 0.00 | 0 | 0.00 | 19 | 95.00 | 0 | 0.00 | 1 | 5.00 | 0 | 0.00 |
| Bhagat Singh Park (Unauthorised Colony) | 20 | 100.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Ambedkar Nagar (Resettlement Colony) | 19 | 95.00 | 0 | 0.00 | 1 | 5.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Samaipur Gaon (Urban Village) | 19 | 95.00 | 0 | 0.00 | 0 | 0.00 | 1 | 5.00 | 0 | 0.00 | 0 | 0.00 |
| **Grand Total** | **99** | **61.88** | **8** | **5.00** | **42** | **26.25** | **2** | **1.25** | **1** | **0.63** | **8** | **5.00** |

### 4.3.2.3 Individual Toilets and Disposal Systems

Of the 160 households surveyed across eight informal settlements in Bhalaswa and Badli ward, 99 (62%) have individual toilets. Of these while a majority (75) have a septic tank based disposal system, 19 are connected to the sewerage system and in five the disposal is directly into the drainage network.

Both the septic tank based system of disposal and the direct disposal in the drainage network are creating environmental pollution within the settlements, in the neighbourhood and also contributing to the pollution at the city level.

## Table 23: Individual Toilets and Disposal System

| Informal Settlements | Sewer | | Septic tank | | In Drainage System | | Not Applicable | |
|---|---|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| Rajeev Nagar (Unauthorised Colony) | 0 | 0.00 | 19 | 95.00 | 0 | 0.00 | 1 | 5.00 |
| Bhalaswa (Resettlement Colony) | 0 | 0.00 | 4 | 20.00 | 0 | 0.00 | 16 | 80.00 |
| Bhalaswa Gaon (Urban Village) | 0 | 0.00 | 13 | 65.00 | 5 | 25.00 | 2 | 10.00 |
| Sanjay Colony (JJ Cluster) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| Bhagat Singh Park (Unauthorised Colony) | 0 | 0.00 | 20 | 100.00 | 0 | 0.00 | 0 | 0.00 |
| Ambedkar Nagar (Resettlement Colony) | 19 | 95.00 | 0 | 0.00 | 0 | 0.00 | 1 | 5.00 |
| Samaipur Gaon (Urban Village) | 0 | 0.00 | 19 | 95.00 | 0 | 0.00 | 1 | 5.00 |
| **Grand Total** | **19** | **11.88** | **75** | **46.88** | **5** | **3.13** | **61** | **38.13** |

#### 4.3.2.4 Ratio of Toilet Seats

Of the eight informal settlements covered under this study, only three have households that depend on community level toilet facilities, namely, B. D. Patil Nagar (JJ cluster), Sanjay Colony (JJ cluster), and Bhalaswa (resettlement colony). Of these settlements while in B. D. Patil Nagar (JJ cluster) and Bhalaswa (resettlement colony) that are located in Bhalaswa ward, public toilet blocks are provided. In Sanjay Colony (JJ cluster) there are no public toilet blocks and thus people have to resort to defecation in the open.

The inadequate provision of toilet seats results in a very high number of people being dependent on one toilet seat. The situation is further worsened due to the poor level of maintenance of the available toilet facilities, which renders many toilet seats useless and thus further increases the pressure on the existing infrastructure. The present ratio of persons per toilet seat ranges from 94 persons per toilet seat in Bhalaswa (resettlement colony) to as many as 592 persons dependent on one toilet seat in B. D. Patil Nagar (JJ cluster). The ratios are much higher than acceptable norms or standards.

**Table 24: Toilet Facilities – Ratios and Deficits**

| Informal Settlements | Toilet Blocks | Toilet seats | Population | Ratio (Persons/ seat) | Required Seats (@ one seat per 25 persons) | Deficit (required – existing) |
|---|---|---|---|---|---|---|
| B. D. Patil Nagar (JJ Cluster) | 2 | 38 | 22500 | 592 | 900 | 862 |
| Rajeev Nagar (Unauthorised Colony) | 0 | 0 | 16500 | Individual Toilets | 0 | 0 |
| Bhalaswa (Resettlement Colony) | 2 | 40 | 3750 | 94 | 150 | 110 |
| Bhalaswa Gaon (Urban Village) | 0 | 0 | 19000 | Individual Toilets | 0 | 0 |
| Sanjay Colony (JJ Cluster) | 0 | 0 | 6490 | No facility | 260 | 260 |
| Bhagat Singh Park (Unauthorised Colony) | 0 | 0 | 5600 | Individual Toilets | 0 | 0 |
| Ambedkar Nagar (Resettlement Colony) | 0 | 0 | 3400 | Individual Toilets | 0 | 0 |
| Samaipur Gaon (Urban Village) | 0 | 0 | 20000 | Individual Toilets | 0 | 0 |

#### 4.3.2.5 Deficit Analysis

Of the eight informal settlements covered under this study only three have households that depend on community level toilet facilities, namely, B. D. Patil Nagar (JJ cluster), Sanjay Colony (JJ cluster), and Bhalaswa (resettlement colony). Of these settlements the deficit of toilet seats is the highest in B. D. Patil Nagar (JJ cluster) where there is a shortfall of 862 toilet seats. In Bhalaswa (resettlement colony) while 150 seats are required only 40 exist, leading to a deficit of 110 seats. In Sanjay Colony (JJ cluster) there are no public toilet blocks and thus there is a deficit of 100 per cent (260 toilet seats).

#### 4.3.2.6 Problems Related to Toilet Facilities

The Focus Group Discussions revealed that the informal communities faced various problems due to inadequate and inappropriate provisions, as well as poor operation and maintenance of community toilet blocks. Some of problems that were cited in the course of the discussions with the communities are outlined under:

- Inadequate provision of toilets results in long waiting time especially during the morning hours. This leads to arguments and fights in the queues and children waiting their turn are often bullied and pushed aside by the adults. Women have to adapt to the

circumstances, and are forced to use the toilets when the queues are shorter as they are pressured with their household responsibilities and cannot afford to spend so much time waiting.

- In communities where resident have to walk some distance as the toilet blocks are located away from the home, problems were encountered particularly by the women. The women cited that walking long distances with a water can or bucket, invites sniggering and teasing from bystanders. They are forced to use the toilets when there are not too many people watching them – in the afternoons or nights or very early in the morning. Using the toilets at nights also becomes difficult and the women have to go in groups.
- The poor level of maintenance of the toilet blocks in communities seems to be a universal complaint. The toilet doors are often broken, latches are pulled off, pans are damaged and clogging due to improper usage renders several of the toilet seats unusable. The houses near toilet blocks have to bear the brunt of the overflowing septic tanks as was reported by many of the communities.
- The conditions inside the toilets were described to be very unhygienic and pathetic. The women's toilets are found to have sanitary cloth, empty medicine bottles, as well as *mishiri* marks (a tobacco powder or paste used as a laxative) all over the floor and lower walls of the toilets. In the men's toilets alcohol bottles are often found on the floor or in the pans. Stubbed out cigarette buts leave their mark on the door and walls of the toilets and empty tobacco and cigarette pouches are left strewn on the floor of the toilet blocks. The children revealed that graffiti on the inside walls of the toilets as well as sticking of offensive posters adds to the overall unpleasantness of the toilet block. Such poor conditions of the toilet blocks were particularly visible in communities where the user group remains undefined, where the number of people using the toilet block is very large or where the toilet block is located in an area which has a high floating population combined with the lack of a specific agency taking responsibility for regular O&M. While exploring the reasons for the lack of maintenance of the toilet blocks, it was revealed that there is no feeling of ownership towards the asset. Thus it is used without any responsibility. Many also felt that the maintenance role is largely that of the MCD, and if they fail to carry it out, the situation is bound to be bad.
- The public toilet blocks are largely lacking in the facilities which are essential for the proper functioning of a toilet block like water, electricity and waste bins and other facilities which make them useful and accessible to all sections of the society like squatting pans for children, urinals for men and bathrooms. Mostly water is not available in on near the toilet blocks and users have to travel some distance to fetch water. The lack of adequate water has a bearing on the level of cleanliness that can be maintained in the toilet block and the proper operation of the disposal system. Interaction with the women's groups revealed that their use of the toilet block is limited to the daytime due to lack of electricity and when ever they use the toilet in the evening they have to go in groups with torches. This not only results in them wasting a lot of time but also exposes them to unnecessary risks.
- In communities where the MCD does not attend to the O&M of the toilet blocks, the toilets may be left unattended and serviced only when the situation deteriorates considerably. Communities have devised their own systems of O&M through the initiative of the CBO or the users themselves. In such cases a sweeper is appointed and paid a fixed amount on a monthly or annual basis, the monthly amount ranging between Rs 15-20.
- No cognisance is taken of the needs of special groups like handicapped/aged in the design of the toilets. During the rainy season the path gets very slippery and several accidents and falls have been reported. Ramps, lower elevation and plinth heights and convenient height of the steps were suggested. The provision of at least one western style seat in a block would prevent the old people or physically handicapped from having to squat.

#### 4.3.2.7 Problems Related to Toilet Facilities – Gender-based Analysis

The issues related to poor sanitation for women are manifold and were forcefully put forth by women during interactions with them in FGDs

- Owing to unclean and overloaded toilets and lack of electricity in toilet blocks, women often change their body clocks to answer nature's call. The toilet time of many women is late at night or very early in the morning, particularly where they are forced to defecate in

the open, where darkness offers a modicum of privacy. This exposes the women to social risks. The fear of being sexually violated in the toilet blocks at night is very real for young girls and women. To confront drunken men, drug users and anti-social elements in the women's toilets at night is not unusual. The absence of latches on doors, broken doors, broken roofs or skylight on the roofs of toilets creates an atmosphere of tension and stress for women when they use the toilets.

- Women use *mishiri*, or tobacco as a laxative which being tobacco- based causes other complications such as mouth ulcers, mouth cancer etc. Women control their intestinal urges and school their bodies resulting in lifelong constipation for many.
- Most women, were conscious of the practices employed, but were totally unaware of the long-term health implications and impact of poor sanitation and hygiene on life expectancy. There was more awareness regarding issues concerned with children's health. But there was almost no awareness and an attitude of "it's not in our hands" when it came to their own health.
- There is a lack of gender sensitivity amongst planners and engineers. Women's sanitation needs are different from those of men and this needs to be first internalised as a concept and then incorporated in planning and implementation.

#### 4.3.2.8 Payment for Toilet Facilities

Only 32 households (20%) pay for using toilet facilities and these are located in B. D. Patil Nagar (JJ colony) and Bhalaswa resettlement colony. The amount of payment made is less than Rs 30 per month per household. Majority of the households who pay for using toilet facilities are making the payments to the municipal corporation (16) and to private sweepers (12) employed for cleaning and maintaining the toilet blocks.

**Table 25: Payment for Toilet Facilities**

| Informal Settlements | Yes | | No | | Not Applicable | |
|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 18 | 90.00 | 0 | 0.00 | 2 | 10.00 |
| Rajeev Nagar (Unauthorised Colony) | 0 | 0.00 | 1 | 5.00 | 19 | 95.00 |
| Bhalaswa (Resettlement Colony) | 14 | 70.00 | 2 | 10.00 | 4 | 20.00 |
| Bhalaswa Gaon (Urban Village) | 0 | 0.00 | 7 | 35.00 | 13 | 65.00 |
| Sanjay Colony (JJ Cluster) | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| Bhagat Singh Park (Unauthorised Colony) | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| Ambedkar Nagar (Resettlement Colony) | 0 | 0.00 | 1 | 5.00 | 19 | 95.00 |
| Samaipur Gaon (Urban Village) | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| **Grand Total** | **32** | **20.00** | **11** | **6.88** | **117** | **73.13** |

#### 4.3.2.9 Preference for Toilet Facilities

The Focus Group Discussions revealed that there is a high level of aspiration in slum communities to have individual toilet facilities. They shared that the individual toilets would be the best option as they would be better maintained with each household responsible for its toilet. Some communities recognising the space constraints within their houses were of the view that well maintained public toilets could be the solution to their sanitation problems. It is thus felt that wherever possible individual toilets should be provided by regularising and removing procedural hurdles. In settlements where individual toilets are not feasible due to social and technical constraints, public toilet blocks should be provided.

## Key Findings: Toilets

- Majority (62%) of the adult population in informal settlements is dependent on individual toilet facilities for their sanitation needs. Community toilet facilities have also emerged as a sanitation facility used by the adults in the slums with 18 per cent of the adult population using this type of facility.
- In JJ clusters, households depend on community level toilet facilities for their sanitation needs and due to absence/inadequate provisions/poor maintenance rendering the facility useless they have to resort to defecation in the open.
- Of the two unauthorised colonies covered under this study while Rajeev Nagar (Bhalaswa ward) shows a dependence on community toilets, in Bhagat Singh Park (Badli ward) all the households surveyed have individual toilets.
- In the two other categories of informal settlements, namely, resettlement colony and urban village majority of the households have access to individual level toilet facilities.
- The household survey in the ward reveals that majority (62%) of the child population is dependent on individual toilet facilities for their sanitation needs. In 26.35 per cent of households children defecate in the open. In only five per cent of the households children use community toilets as a sanitation facility.
- In unauthorised colonies (Rajeev Nagar in Bhalaswa ward and Bhagat Singh park in Badli ward) and urban villages (Bhalaswa Gaon and Samaipur Gaon) children use individual household level toilet facilities.
- In the resettlement colony of Badli ward (Ambedkar Nagar) while majority of the children make use of individual toilets in Bhalaswa ward (Bhalaswa resettlement colony) majority of the children defecate in the open or access community toilet facilities.
- Due to the absence of community level toilet facilities as is the case in Sanjay Colony (Badli ward) or due to the lack of child-specific toilet facilities as is the case in B. D. Patil Nagar, majority of the children in JJ clusters resort to defecation in the open.
- Of the 160 households surveyed across eight informal settlements in Bhalaswa and Badli ward, 99 (62%) have individual toilets. Of these while a majority (75) have a septic tank based disposal system, which is based on a redundant technology and is creating environmental pollution within the settlements, in the neighbourhood and also contributing to pollution at the city level.
- The inadequate provision of toilet seats results in a very high number of people being dependent on one toilet seat. The situation is further worsened due to the poor level of maintenance of the available toilet facilities that renders many toilet seats useless and thus further increases the pressure on the existing infrastructure. The present ratio of persons per toilet seat ranges from 94 in Bhalaswa (resettlement colony) to as high as 592 in B. D. Patil Nagar (JJ cluster). The ratios are much higher than acceptable norms or standards.
- The Focus Group Discussions revealed that the informal settlements faced various problems due to inadequate and inappropriate provisions, as well as poor operation and maintenance of community toilet blocks. Some of problems that were cited in the course of the discussions with the communities are outlined under:
  - Inadequate provision of toilets results in long waiting time especially during the morning hours.
  - In communities where resident have to walk some distance as the toilet blocks are located away from the home, problems were encountered particularly by the women. The women cited that walking long distances with a water can or bucket, invites sniggering and teasing from bystanders.
  - The poor level of maintenance of the toilet blocks in communities seems to be a universal complaint.
  - The conditions inside the toilets were described to be very unhygienic and pathetic.
  - The public toilet blocks are largely lacking in the facilities which are essential for the proper functioning like water, electricity and waste bins. Other facilities which would make them useful and accessible to all sections of the society are squatting pans for children, urinals for men and bathrooms.
  - In communities where the MCD does not attend to the O&M of the toilet blocks, the toilets may be left unattended and serviced only when the situation deteriorates considerably. Largely, communities have devised their own systems of O&M through the initiative of the CBO or the users themselves.
  - No cognisance is taken of the needs of special groups like handicapped/aged in the design of the toilets.
- The issues related to poor sanitation for women are manifold and were forcefully put forth by women during FGDs:
  - Owing to unclean and overloaded toilets and lack of electricity in toilet blocks, women often change their body clocks to answer nature's call.

- Women use *mishri*, or tobacco as a laxative which being tobacco-based causes other complications such as mouth ulcers, mouth cancer, etc. Women control their intestinal urges and school their bodies leading to lifelong constipation for many of them.
- Most women, conscious of the practices employed, were totally unaware of the long-term health implications and the impact of poor sanitation and hygiene on life expectancy.
- There is a lack of gender sensitivity amongst planners and engineers. Women's sanitation needs are different from those of men and this needs to be first internalised as a concept and then incorporated in planning and implementation.

- Only 32 households (20%) pay for using toilet facilities.
- There is a high aspiration level in slum communities (as revealed in the FGDs) to have individual toilet facilities where there are community level facilities or no facilities at all.

### 4.3.3 Drainage

#### 4.3.3.1 Wastewater Generation

In a majority of households surveyed in the informal settlements the main activities/uses resulting in generation of wastewater are washing and bathing. In 143 households (89.38%) the activities generating wastewater within the house are bathing and washing. In only 16 households, (10 % ) toilets are located within the houses and are contributing to generation of wastewater. Of these 16 households, nine are in Bhalaswa Gaon (urban village), four in Rajeev Nagar (unauthorised colony), two in Bhalaswa (resettlement colony) and only one in Ambedkar Nagar (resettlement colony).

**Table 26: Sources of Wastewater**

| Informal Settlements | Bathing | | Washing + Bathing | | Toilets | |
|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 0 | 0.00 | 20 | 100.00 | 0 | 0.00 |
| Rajeev Nagar (Unauthorised Colony) | 0 | 0.00 | 16 | 80.00 | 4 | 20.00 |
| Bhalaswa (Resettlement Colony) | 0 | 0.00 | 18 | 90.00 | 2 | 10.00 |
| Bhalaswa Gaon (Urban Village) | 0 | 0.00 | 11 | 55.00 | 9 | 45.00 |
| Sanjay Colony (JJ Cluster) | 0 | 0.00 | 20 | 100.00 | 0 | 0.00 |
| Bhagat Singh Park (Unauthorised Colony) | 0 | 0.00 | 20 | 100.00 | 0 | 0.00 |
| Ambedkar Nagar (Resettlement Colony) | 0 | 0.00 | 19 | 95.00 | 1 | 5.00 |
| Samaipur Gaon (Urban Village) | 1 | 5.00 | 19 | 95.00 | 0 | 0.00 |
| **Grand Total** | **1** | **0.63** | **143** | **89.38** | **16** | **10.00** |

#### 4.3.3.2 Type of Drainage System

The informal settlements covered in Bhalaswa and Badli wards have different types of drainage systems, namely, open *kutcha* and open *pucca* drains. Depending on the level of community initiatives taken to upgrade the drainage system there has been a progression from its most rudimentary stage that is, open *kutcha* to open *pucca*. Majority of the households in the wards covered (119, 74.38%) have access to open *pucca* type of drainage system. 26 per cent of the houses have access to open *kutcha* drains.

## Table 27: Type of Drainage System

| Informal Settlements | Open Kutcha | | Open Pucca | |
|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 0 | 0.00 | 20 | 100.00 |
| Rajeev Nagar (Unauthorised Colony) | 16 | 80.00 | 4 | 20.00 |
| Bhalaswa (Resettlement Colony) | 0 | 0.00 | 20 | 100.00 |
| Bhalaswa Gaon (Urban Village) | 0 | 0.00 | 20 | 100.00 |
| Sanjay Colony (JJ Cluster) | 7 | 35.00 | 13 | 65.00 |
| Bhagat Singh Park (Unauthorised Colony) | 18 | 90.00 | 2 | 10.00 |
| Ambedkar Nagar (Resettlement Colony) | 0 | 0.00 | 20 | 100.00 |
| Samaipur Gaon (Urban Village) | 0 | 0.00 | 20 | 100.00 |
| **Grand Total** | **41** | **25.63** | **119** | **74.38** |

## Table 28: Type of Household Level Disposal System/Mechanism

| **Informal Settlements** | **Outside Home** | | **In a Khadda** | | **In nalla** | | **Mixed** | |
|---|---|---|---|---|---|---|---|---|
| | **Number of HHs** | **% of HHs** | **Number of HHs** | **% of HHs** | **Number of HHs** | **% of HHs** | **Number of HHs** | **% of HHs** |
| B. D. Patil Nagar (JJ Cluster) | 1 | 5.00 | 0 | 0.00 | 19 | 95.00 | 0 | 0.00 |
| Rajeev Nagar (Unauthorised Colony) | 2 | 10.00 | 8 | 40.00 | 8 | 40.00 | 2 | 10.00 |
| Bhalaswa (Resettlement Colony) | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 | 0 | 0.00 |
| Bhalaswa Gaon (Urban Village) | 0 | 0.00 | 1 | 5.00 | 18 | 90.00 | 1 | 5.00 |
| Sanjay Colony (JJ Cluster) | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 | 0 | 0.00 |
| Bhagat Singh Park (Unauthorised Colony) | 0 | 0.00 | 18 | 90.00 | 2 | 10.00 | 0 | 0.00 |
| Ambedkar Nagar (Resettlement Colony) | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 | 0 | 0.00 |
| Samaipur Gaon (Urban Village) | 0 | 0.00 | 1 | 5.00 | 18 | 90.00 | 1 | 5.00 |
| **Grand Total** | **3** | **1.88** | **28** | **17.50** | **125** | **78.13** | **4** | **2.50** |

### 4.3.3.3 Maintenance of Drainage System

Different actors are involved in the maintenance of the drainage system in the informal settlements surveyed including municipality, private sweepers and the community. Majority of the households (88; 55%) depend on the municipality to undertake the maintenance of the drainage in their settlement. A sizeable proportion of the households (45, 28.13%) have taken the onus of maintaining the drainage system on themselves. Only 12 households (7.50%) have employed a private sweeper to clean and maintain the drainage system in their area. Though fifteen households depend on the municipality for the maintenance of drainage in their area, however, due to the erratic nature of the response from the local body these

households have either employed private sweepers or they undertake the maintenance on their own.

The frequency of cleaning of the drains varies from daily to monthly. Majority (129, 80.63%) of the households reported that the frequency of cleaning drains was weekly. Twenty-eight households (17.80%) reported that the frequency of cleaning the drains was daily. Majority of these households are in the resettlement colony of Ambedkar Nagar located in Badli ward.

A poorly maintained and non-functional drainage network has far reaching environmental health implications as stagnant water leads to a proliferation of disease spreading vectors like mosquitoes, rats, flies, etc. Discussions with the communities revealed other aspects which act as irritants like the smell and the sight of filth just outside the house. Mothers who participated in the FGDs brought to light the fact that children play barefoot in these areas and then act as carriers of the dirt unaware of the health risks involved. These problems get accentuated during the monsoons.

#### 4.3.3.4 Level of Satisfaction with Drainage System

Of the total households majority (56.25%) are not at all satisfied with the condition of the drainage system. While twenty-five households (15.63%) were satisfied and 45 households (28.13%) were fairly satisfied. The figures reveal a high level of dissatisfaction among communities with respect to the drainage system and its maintenance. The level of satisfaction is dependent on the frequency of cleaning with households that have access to daily cleaning reporting a higher level of satisfaction as compared to others.

**Table 29: Agency Responsible for Maintenance of Drainage System**

| | Municipality | | Private Sweepers | | Community | | Municipality + Private Sweepers | | Municipality + Community | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 5 | 25.00 | 8 | 40.00 | 3 | 15.00 | 1 | 5.00 | 3 | 15.00 |
| Rajeev Nagar (Unauthorised Colony) | 1 | 5.00 | 0 | 0.00 | 19 | 95.00 | 0 | 0.00 | 0 | 0.00 |
| Bhalaswa (Resettlement Colony) | 18 | 90.00 | 1 | 5.00 | 0 | 0.00 | 0 | 0.00 | 1 | 5.00 |
| Bhalaswa Gaon (Urban Village) | 7 | 35.00 | 3 | 15.00 | 1 | 5.00 | 9 | 45.00 | 0 | 0.00 |
| Sanjay Colony (JJ Cluster) | 18 | 90.00 | 0 | 0.00 | 1 | 5.00 | 0 | 0.00 | 1 | 5.00 |
| Bhagat Singh Park (Unauthorised Colony) | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 | 0 | 0.00 | 0 | 0.00 |
| Ambedkar Nagar (Resettlement Colony) | 19 | 95.00 | 0 | 0.00 | 1 | 5.00 | 0 | 0.00 | 0 | 0.00 |
| Samaipur Gaon (Urban Village) | 20 | 100.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| **Grand Total** | **88** | **55.00** | **12** | **7.50** | **45** | **28.13** | **10** | **6.25** | **5** | **3.13** |

## Table 30: Frequency of Cleaning Drainage System

| Informal Settlements | Daily | | Weekly | | Monthly | |
|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 1 | 5.00 | 18 | 90.00 | 1 | 5.00 |
| Rajeev Nagar (Unauthorised Colony) | 7 | 35.00 | 13 | 65.00 | 0 | 0.00 |
| Bhalaswa (Resettlement Colony) | 0 | 0.00 | 20 | 100.00 | 0 | 0.00 |
| Bhalaswa Gaon (Urban Village) | 0 | 0.00 | 19 | 95.00 | 1 | 5.00 |
| Sanjay Colony (JJ Cluster) | 0 | 0.00 | 19 | 95.00 | 1 | 5.00 |
| Bhagat Singh Park (Unauthorised Colony) | 5 | 25.00 | 15 | 75.00 | 0 | 0.00 |
| Ambedkar Nagar (Resettlement Colony) | 14 | 70.00 | 6 | 30.00 | 0 | 0.00 |
| Samaipur Gaon (Urban Village) | 1 | 5.00 | 19 | 95.00 | 0 | 0.00 |
| **Grand Total** | **28** | **17.50** | **129** | **80.63** | **3** | **1.88** |

## Table 31: Level of Satisfaction with Maintenance of Drainage System

| Informal Settlements | Satisfied | | Fairly Satisfied | | Not satisfied | |
|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 1 | 5.00 | 4 | 20.00 | 15 | 75.00 |
| Rajeev Nagar (Unauthorised Colony) | 4 | 20.00 | 8 | 40.00 | 8 | 40.00 |
| Bhalaswa (Resettlement Colony) | 2 | 10.00 | 1 | 5.00 | 17 | 85.00 |
| Bhalaswa Gaon (Urban Village) | 3 | 15.00 | 4 | 20.00 | 13 | 65.00 |
| Sanjay Colony (JJ Cluster) | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| Bhagat Singh Park (Unauthorised Colony) | 3 | 15.00 | 17 | 85.00 | 0 | 0.00 |
| Ambedkar Nagar (Resettlement Colony) | 11 | 55.00 | 7 | 35.00 | 2 | 10.00 |
| Samaipur Gaon (Urban Village) | 1 | 5.00 | 4 | 20.00 | 15 | 75.00 |
| **Grand Total** | **25** | **15.63** | **45** | **28.13** | **90** | **56.25** |

### Table 32: Frequency of Cleaning of Drains and Level of Satisfaction

| Frequency of Cleaning of Drains | Level of Satisfaction with Drainage | | | | | |
|---|---|---|---|---|---|---|
| | Satisfied | | Fairly satisfied | | Not satisfied | |
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| Daily | 19 | 67.86 | 9 | 32.14 | | 0 |
| Weekly | 6 | 4.65 | 36 | 27.90 | 87 | 67.44 |
| Monthly | 0 | 0 | 0 | 0 | 3 | 100 |

#### 4.3.3.5 Payment for Maintenance of Drainage System

Majority of the households (131, 81.88%) do not pay for maintenance of the drainage system as they themselves are undertaking the cleaning of the drains. Of the twenty nine households that are paying for the maintenance of the drainage network, six pay less than Rs 10 per month, 22 pay in the range of Rs 10 to Rs 20 per month and only one household is paying more than Rs 20 per month.

The households making payment of less than Rs 10 per month are located in B. D. Patil Nagar (JJ cluster) and Bhalaswa Gaon (urban village). The households making a payment of Rs 10 or more are located in B. D. Patil Nagar (JJ cluster), Bhalaswa Gaon (urban village) and Ambedkar Nagar (resettlement colony).

In all these settlements faced with the neglect of the municipal body a proportion of households have got together and appointed private sweepers. Each household contributes towards this on a monthly basis. Majority of the payments mentioned by households surveyed are those being made to the private sweepers employed by the community.

### Table 33: Payment for Drainage Maintenance

| Informal Settlements | Less than Rs 10 per month | | Rs 10 – Rs 20 per month | | More than Rs 20 per month | | No payment | |
|---|---|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 3 | 15.00 | 10 | 50.00 | 0 | 0.00 | 7 | 35.00 |
| Rajeev Nagar (Unauthorised Colony) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| Bhalaswa (Resettlement Colony) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| Bhalaswa Gaon (Urban Village) | 3 | 15.00 | 10 | 50.00 | 1 | 5.00 | 6 | 30.00 |
| Sanjay Colony (JJ Cluster) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| Bhagat Singh Park (Unauthorised Colony) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| Ambedkar Nagar (Resettlement Colony) | 0 | 0.00 | 2 | 10.00 | 0 | 0.00 | 18 | 90.00 |
| Samaipur Gaon (Urban Village) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| **Grand Total** | **6** | **3.75** | **22** | **13.75** | **1** | **0.63** | **131** | **81.88** |

## Table 34: Agency to which Payment is Made

| Informal Settlements | Municipality | | Private Sweepers | | No Payment | |
|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 2 | 10.00 | 11 | 55.00 | 7 | 35.00 |
| Rajeev Nagar (Unauthorised Colony) | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| Bhalaswa (Resettlement Colony) | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| Bhalaswa Gaon (Urban Village) | 2 | 10.00 | 12 | 60.00 | 6 | 30.00 |
| Sanjay Colony (JJ Cluster) | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| Bhagat Singh Park (Unauthorised Colony) | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| Ambedkar Nagar (Resettlement Colony) | 0 | 0.00 | 2 | 10.00 | 18 | 90.00 |
| Samaipur Gaon (Urban Village) | 0 | 0.00 | 0 | 0.00 | 20 | 100.00 |
| **Grand Total** | **4** | **2.50** | **25** | **15.63** | **131** | **81.88** |

## Key Findings: Drainage

- In majority of the households surveyed the main activities/uses resulting in generation of wastewater are washing and bathing.
- The informal settlements have different types of drainage systems present, namely, open *kutcha* and open *pucca* drains. Depending on the level of community initiatives taken to upgrade the drainage system there has been a progression from the rudimentary, open *kutcha* to open *pucca*. Majority of the households in the informal settlements covered (119, 74.38%) have access to open *pucca* type of drainage system and 26 per cent of the houses have open *kutcha* drains.
- The different actors involved in the maintenance of the drainage system in the informal settlements include municipality, private sweepers and community. Majority of the households (88; 55%) depend on the municipality to undertake the maintenance of the drainage in their settlement. A sizeable proportion of the households (45 households; 28.13%) have taken the onus of maintaining the drainage system on their own. Only 12 households (7.50%) have employed a private sweeper to clean and maintain the drainage system in their area.
- The frequency of cleaning of the drains varies from daily to monthly. Majority (129 households; 80.63%) of the households reported that the frequency of cleaning drains was weekly.
- Of the total households, majority (56.25%) are not at all satisfied with the condition of the drainage system. There is a high level of dissatisfaction among communities with respect to the drainage system and its maintenance. The level of satisfaction is dependent on the frequency of cleaning with households that have access to daily cleaning reporting a higher level of satisfaction as compared to others.
- Majority of the households (131; 81.88%) do not make payment for maintenance of the drainage system as they themselves are undertaking the cleaning of the drains. Wherever payment is made it is in the range of Rs 10-20 per month.

### 4.3.4 Solid Waste Management

#### 4.3.4.1 System of Garbage Management

There is an absence of an organised system of garbage collection by the municipal authorities in all the slums surveyed in the two wards. Majority of the households are indulging in dumping of garbage in the absence of any organised system of garbage collection.

#### 4.3.4.2 Place of Disposal of Garbage

Majority of the households are indulging in dumping of garbage in the absence of any organised system of garbage collection. The households are dumping garbage at a variety of locations including by-lanes, drains, *nallas*, open area, near toilets, and in municipal bins. The most common place for dumping by individual households is the municipal bin.

#### 4.3.4.3 Frequency of Clearance of Garbage by the Municipal Authority

The communities voiced their dissatisfaction with the low and irregular frequency of clearance of garbage from their settlements by the municipal staff. The frequency of garbage clearance from the slum communities varies from daily, alternate day to twice a week. While a large proportion (41%) of the households reported that the garbage is cleared on a daily basis there are an equally large proportion which report that the frequency of clearance varies from twice a week to once in 15 days.

If the environmental sanitation situation in slums is to be improved there is a need to ensure a regular frequency of clearance of the municipal bin preferably daily irrespective of the land ownership and legal status. Further, the location of the municipal bin should be planned in consultation with the community. While the clearance of the garbage is the responsibility of the local body there is a need to create an awareness among the slum communities to ensure that they change their current practices and organise a settlement level collection system and its subsequent dumping in the municipal bin.

#### 4.3.4.4 Problems Faced by Residents due to Inadequate Disposal of Garbage

Improper clearance of garbage has far reaching environmental health implications as the garbage leads to proliferation of disease spreading vectors like mosquitoes, rats, flies. Discussions with the communities revealed other aspects which act as irritants like the smell and the sight of filth.

**Key Findings: Solid Waste Management**

- There is an absence of an organised system of garbage collection by the municipal authorities in all the slums surveyed in the two wards. Majority of the households are indulging in dumping of garbage at a variety of locations including by-lanes, drains, *nallas*, open area, near toilets, and in municipal bins.
- The communities voiced their dissatisfaction with the low and irregular frequency of clearance of garbage from their settlements by the municipal staff. While a large proportion (41%) of the households reported that the garbage is cleared on a daily basis there are an equally large proportion which report that the frequency of clearance varies from twice a week to once in 15 days.
- Improper clearance of garbage has far reaching environmental health implications as the garbage leads to proliferation of disease spreading vectors like mosquitoes, rats, flies. Discussions with the communities revealed other aspects which act as irritants like the smell and the sight of filth.
- If the environmental sanitation situation in slums is to be improved there is a need to ensure a regular frequency of clearance of the municipal bin preferably daily irrespective of the land ownership and legal status. Further, the location of the municipal bin should be planned in consultation with the community. While the clearance of the garbage is the responsibility of the local body there is a need to create an awareness among the slum communities to ensure that they change their current practices and organise settlement level collection system and its subsequent dumping in the municipal bin.

## 4.4 Health Status

### 4.4.1 Days lost at School due to Illness

Approximately 75 per cent of the children in the households surveyed are absent from school for three days to one week due to illness during the last six months. Majority of the children that miss school due to illness are absent for approximately one week in a month. The recurrent illnesses makes the children susceptible to infections and also incapacitates them from attending school regularly and affects their scholastic performances.

### 4.4.2 Person – Days lost due to Illness

Approximately 80 per cent of the adults in households surveyed have to miss work from three to seven days in a month due to illness. Majority of the adults that miss work reportedly do so for more than one week.

### 4.4.3 Expenditure on Health

While all households reported that they incur an expenditure every month for health/illnesses. While 50 per cent incur an expenditure of over Rs 100 per month for illness, the remaining 50 per cent spend less than Rs 100 per month for health.

The diseases, which were cited by the slum communities in case of adults, were malaria, dysentery, cholera, jaundice, typhoid and presence of worms. The diseases, which were cited by the slum communities in case of children, are malaria, dysentery, tuberculosis, cholera, jaundice and presence of worms.

The families also shared that they spend a lot of money on coping mechanisms like mosquito coils, mats, etc.

**Table 35: Days lost at School due to Illness**

| | 3–5 days | | 5–7 days | | More than 7 days | | None | | Not Applicable | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 4 | 20.00 | 2 | 10.00 | 8 | 40.00 | 2 | 10.00 | 3 | 15.00 |
| Rajeev Nagar (Unauthorised Colony) | 4 | 20.00 | | 0.00 | 9 | 45.00 | | 0.00 | 7 | 35.00 |
| Bhalaswa (Resettlement Colony) | 4 | 20.00 | | 0.00 | 8 | 40.00 | | 0.00 | 8 | 40.00 |
| Bhalaswa Gaon (Urban Village) | 3 | 15.00 | 6 | 30.00 | 4 | 20.00 | 1 | 5.00 | 6 | 30.00 |
| Sanjay Colony (JJ Cluster) | 4 | 20.00 | 1 | 5.00 | 7 | 35.00 | | 0.00 | 8 | 40.00 |
| Bhagat Singh Park (Unauthorised Colony) | 3 | 15.00 | 2 | 10.00 | 8 | 40.00 | 2 | 10.00 | 5 | 25.00 |
| Ambedkar Nagar (Resettlement Colony) | 14 | 70.00 | | 0.00 | | 0.00 | | 0.00 | 6 | 30.00 |
| Samaipur Gaon (Urban Village) | 5 | 25.00 | 2 | 10.00 | 6 | 30.00 | 2 | 10.00 | 5 | 25.00 |
| **Grand Total** | **41** | **25.63** | **13** | **8.13** | **50** | **31.25** | **7** | **4.38** | **48** | **30.00** |

## Table 36: Person-days lost at Work due to Illness

| | 3–5 days | | 5–7 days | | More than 7 days | | None | | Not Applicable | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 1 | 5.00 | | 0.00 | 12 | 60.00 | 2 | 10.00 | 5 | 25.00 |
| Rajeev Nagar (Unauthorised Colony) | 3 | 15.00 | 1 | 5.00 | 10 | 50.00 | 1 | 5.00 | 5 | 25.00 |
| Bhalaswa (Resettlement Colony) | 4 | 20.00 | | 0.00 | 11 | 55.00 | 1 | 5.00 | 4 | 20.00 |
| Bhalaswa Gaon (Urban Village) | 2 | 10.00 | 6 | 30.00 | 7 | 35.00 | 1 | 5.00 | 4 | 20.00 |
| Sanjay Colony (JJ Cluster) | 4 | 20.00 | 3 | 15.00 | 11 | 55.00 | | 0.00 | 2 | 10.00 |
| Bhagat Singh Park (Unauthorised Colony) | 17 | 85.00 | 1 | 5.00 | | 0.00 | 2 | 10.00 | | 0.00 |
| Ambedkar Nagar (Resettlement Colony) | 7 | 35.00 | 1 | 5.00 | 9 | 45.00 | 2 | 10.00 | 1 | 5.00 |
| Samaipur Gaon (Urban Village) | 4 | 20.00 | 3 | 15.00 | 7 | 35.00 | | 0.00 | 6 | 30.00 |
| Grand Total | 42 | 26.25 | 15 | 9.38 | 67 | 41.88 | 9 | 5.63 | 27 | 16.88 |

## Table 37: Expenditure on Health

| | Less than Rs 100 per month | | Rs 100–200 per month | | Rs 200 – Rs 500 per month | | Rs 500 – Rs 1000 per month | | More than Rs 1000 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs | Number of HHs | % of HHs |
| B. D. Patil Nagar (JJ Cluster) | 6 | 30.00 | 4 | 20.00 | 6 | 30.00 | 3 | 15.00 | 1 | 5.00 |
| Rajeev Nagar (Unauthorised Colony) | 13 | 65.00 | 7 | 35.00 | | 0.00 | | 0.00 | | 0.00 |
| Bhalaswa (Resettlement Colony) | 15 | 75.00 | 4 | 20.00 | 1 | 5.00 | | 0.00 | | 0.00 |
| Bhalaswa Gaon (Urban Village) | 1 | 5.00 | 9 | 45.00 | 9 | 45.00 | 1 | 5.00 | | 0.00 |
| Sanjay Colony (JJ Cluster) | 13 | 65.00 | 7 | 35.00 | | 0.00 | | 0.00 | | 0.00 |
| Bhagat Singh Park (Unauthorised Colony) | | 0.00 | 6 | 30.00 | 10 | 50.00 | 4 | 20.00 | | 0.00 |
| Ambedkar Nagar (Resettlement Colony) | 16 | 80.00 | 3 | 15.00 | 1 | 5.00 | | 0.00 | | 0.00 |
| Samaipur Gaon (Urban Village) | 12 | 60.00 | 8 | 40.00 | | 0.00 | | 0.00 | | 0.00 |
| **Grand Total** | **76** | **47.50** | **48** | **30.00** | **27** | **16.88** | **8** | **5.00** | **1** | **0.63** |

### Key Findings: Health Status

- Approximately 75 per cent of the children in the households surveyed are absent from school for 3 days to one week due to illness in the last six months. The recurrent illnesses make the children susceptible to infections and also incapacitate them from attending school regularly and affect their scholastic performances.
- Approximately 80 per cent of the adults in households surveyed have to be cannot work for 3 to 7 days in a month due to illness. Majority of the adults that miss work reportedly do so for more than one week
- While all households reported that they make expenditure every month for health/illnesses. While 50 per cent make an expenditure of over Rs 100 per month for illness the remaining 50 per cent spend less than Rs 100 per month for health.
- The diseases, which were cited by the slum communities in case of adults, are malaria, dysentery, Cholera, Jaundice, typhoid and presence of worms. The diseases, which were cited by the slum communities in case of children, are malaria, dysentery, Tuberculosis, Cholera, Jaundice and presence of worms.

## 4.5 Prioritised Needs and Expectations

The following tables present the problems related to basic amenities and facilities that were cited by the communities during the FGDs.

### 4.5.1 Problems Related to Water

| Settlements | Problem 1 | Problem 2 | Problem 3 |
|---|---|---|---|
| **JJ Clusters** | | | |
| B. D. Patil Nagar | Poor quality of water supply | Inadequate supply of water to meet the present needs of the community | Very low pressure of water supply |
| Sanjay Colony | Inadequate supply of water to meet the present needs of the community | Poor quality of water supply, water is coloured (yellow) | The number of community water supply points is inadequate for the population |
| **Unauthorised Colonies** | | | |
| Rajeev Nagar | The water supply through Delhi Jal Board Tankers is inadequate to meet present needs of the community | The piped water supply is of poor quality and it isn't potable | The number of community water supply points is inadequate for the population |
| Bhagat Singh Park | The water supply through Tankers is inadequate to meet present needs of the community | Households are forced to collect drinking water from handpumps | Poor quality of water from handpumps; it isn't fit for consumption |
| **Resettlement Colonies** | | | |
| Bhalaswa Resettlement Colony | Poor Quality of water supply | The tanker water supply is completely inadequate to meet the need for drinking water | People have to queue up for long hours to collect water from tankers; there are conflicts and altercations |
| Ambedkar Nagar | Inadequate supply of water to meet the present needs of the community | The timing of water supply is inappropriate; it is at night time | Low pressure of water supply |
| **Urban Villages** | | | |
| Bhalaswa Gaon | Poor Quality of Water | Low Pressure of Water Supply | Inadequate supply of water to meet the present needs of the community |
| Samaipur Gaon | Limited quantity of water supply | Low pressure of supply | Poor quality of water supply |

### 4.5.2 Problems Related to Drainage and Garbage

| Settlement | Problem 1 | Problem 2 | Problem 3 |
|---|---|---|---|
| **JJ Clusters** | | | |
| B. D. Patil Nagar (JJ Colony) | Drainage network is always clogged | Proximity to the Bhalaswa Sanitary Landfill site is causing environmental pollution | Lack of appropriate place for disposing garbage. |
| Sanjay Colony | Drainage network is always clogged; emanates a stink | No provision for adequate drainage of storm water | Drains and roads are clogged with garbage |
| **Unauthorised Colonies** | | | |
| Rajeev Nagar (Unauthorised Colony) | Due to defecation in the open there are environmental problems | The drainage network is clogged with garbage | The low-lying areas within the settlement get waterlogged and thus are difficult to access or traverse. |
| Bhagat Singh Park | The open plots in the settlement are being used for dumping garbage | Lack of maintenance of the drainage network | No staff allocated for collecting waste and cleaning drains |
| **Resettlement Colonies** | | | |
| Bhalaswa Resettlement Colony | No provision for collection of garbage from the settlement | Due to infrequent clearance of garbage from the site poor environmental conditions are created | There is no facility for regular cleaning of drains and roads |
| Ambedkar Nagar | The open area in the settlement are being used for dumping garbage | No staff allocated for collecting waste and cleaning drains | |
| **Urban Villages** | | | |
| Bhalaswa Gaon | The drainage network is clogged due to lack of cleaning and maintenance | Garbage isn't cleared regularly by the municipal corporation and this leads to proliferation of disease spreading vectors | No provision to dispose garbage |
| Samaipur Gaon | Presence of kutcha drains | Poor maintenance of drains | Drains are clogged sue to dumping of garbage |

### 4.5.3 Problems Related to Toilets

| | Problem 1 | Problem 2 | Problem 3 |
|---|---|---|---|
| **JJ Clusters** | | | |
| B. D. Patil Nagar | There is only one community toilet in the settlement thus there are always long queues and the maintenance is also very poor | Women have to face lot of problems in accessing toilet facilities | The community has to pay for using the community toilets; the community feels that the level of service does not deserve any payment |
| Sanjay Colony | Lack of toilet facilities | Residents have to defecate in the open | Women have a lot of problems in accessing toilet facilities |
| **Unauthorised Colonies** | | | |
| Rajeev Nagar | Presence of Individual Toilets | | |
| Bhagat Singh Park | Lack of toilet facilities; approximately 50 per cent of the households defecate in the open | | |
| **Resettlement Colonies** | | | |
| Bhalaswa Resettlement Colony | Presence of Individual Toilets | | |
| Ambedkar Nagar | Lack of water supply for community toilets leads to poor maintenance | | |
| **Urban Villages** | | | |
| Bhalaswa Gaon | Due to lack of community toilets people without individual toilets have to defecate in the open | Women have to face lot of problems in accessing toilet facilities | Lack of appropriate disposal mechanisms for individual toilets |
| Samaipur Gaon | Lack of connection of individual toilets with sewers | | |

## 4.6 Comparative Nature of Issues Across Different Types of Settlements

| Issue/Variable | J. J Clusters | Unauthorised Colonies | Resettlement Colony | Urban Villages |
|---|---|---|---|---|
| **POPULATION AND DEMOGRAPHICS** | | | | |
| Total Population recorded | 5,750 households; 28,990 population | 8,600 households; 22,100 population | 1,384 households; 7,150 population | 6,300 households; 39,000 population |
| | | | | |
| Family Sizes | Average family size of 5 persons per family | | | 6.19 (highest family size among all informal settlements; can be attributed to the presence of joint families |
| Age Composition | Proportion of dependant population (one third of total population) is quite high; Urban villages have approximately 45 per cent of their population under the age of 8 years | | | |
| Sex ratio | A comparatively high sex ratio as compared to urban villages | | | Urban villages have a low sex ratio; females account for 47 and 45 per cent of the total population in Bhalaswa Gaon and Samaipur Gaon respectively |
| Occupation | Majority of households in all types of informal settlements have the head of their household as self-employed | | | |
| Employment type | Majority of households in all types of informal settlements have the head of their household employed in the irregular category | | | |
| **HOUSING** | | | | |
| Housing Type | Majority of households in all types of informal settlements have *pucca* housing | | | |
| | Some houses are *kutcha*; can be attributed to lack of security of tenure | Some houses are *kutcha*; can be attributed to lack of security of tenure | | |
| Size of Houses | Majority of the houses in informal settlements surveyed have a dimensions of 15 x 15 feet (225 sq ft) or more | | | |
| | JJ Clusters have the smallest sizes of dwelling units with large proportions of the houses having dimensions of 10 feet x 10 feet | In unauthorised colonies, resettlement colonies and urban villages the dimensions of the houses surveyed are more than or equal to 15 feet by 15 feet. | | |
| Number of Rooms | A little over half of the households have more than two rooms in their dwelling units. | | | |
| | Jhuggi Jhompri Clusters predominantly have one-room tenements | Majority of the houses in unauthorised colonies have tenements with more than two rooms | Majority of the houses in unauthorised colonies have tenements with one/ two rooms | Majority of the houses in unauthorised colonies have tenements with more than two rooms |
| Floors | The houses in informal settlements are predominantly at ground level. | | | |
| Use of the House | The houses in informal settlements are predominantly used for residential purposes. | | | |
| **WATER** | | | | |
| Type of provision | Community stand-posts are the main water supply sources. | The main sources of water are handpumps and tankers | There is a predominance of community stand-posts as water supply sources. | The main sources of water supply are piped water supply by DJB and handpumps. |
| Duration of water Supply | Water supply is for one to five hours a day | Households dependent on tankers for water supply have no fixed timing or duration for supply. Households dependent on handpumps have supply for 24 hours but the quality is very bad | Water supply for one to five hours. | Water supply for more than or equal to ten hours a day |

| | | | | |
|---|---|---|---|---|
| Time taken to access water supply | Households are dependent on community level water supply sources for water supply; they have to spend upto one hour to fetch water | Households are dependent on DJB tankers and handpumps for water supply; they have to spend approximately one hour to fetch water | The households having access to individual connections they do not have to waste time collecting water; majority of the households accessing community water supply points have to spend upto 30 minutes | Since majority of the households have individual connections they do not have to waste time collecting water; |
| Quality of water Supply | Poor quality of water supply | | | |
| Payment for water | Very few households make payment for water supply; there is however a high level of readiness to pay if provided improved services | | | |
| | | | | A large proportion of households are making payment for water supply; primarily because water supply is at an individual level |
| **TOILETS** | | | | |
| Access to toilet facilities for Adults | Households depend on community level toilet facilities for their sanitation needs and due to absence/ inadequate provisions/ poor maintenance rendering the facility useless they have to resort to defecation in the open | Of the two unauthorised colonies in one there is a dependence on community toilets, and in the other all the households have individual toilets | Majority of the households have access to individual level toilet facilities. | Majority of the households have access to individual level toilet facilities. |
| Access to toilet facilities for Children | Children defecate in the open due to lack of child specific toilet facilities | Children use individual household level toilet facilities | In Badli ward majority of the children make use of individual toilets; in Bhalaswa majority of the children defecate in the open or access community toilet facilities | Children use individual household level toilet facilities |
| Disposal Mechanisms for Individual Toilets | | Inappropriate and redundant disposal mechanisms (septic tank, disposal in drains) which are creating poor environmental conditions | Inappropriate and redundant disposal mechanisms (septic tank, disposal in drains) which are creating poor environmental conditions | Inappropriate and redundant disposal mechanisms (septic tank, disposal in drains) which are creating poor environmental conditions |
| Ratio of persons per toilet seat | Very high number of persons dependent on one seat (592); No facility in one JJ Cluster | Individual Toilets | High number of persons dependent on one seat (94); almost four times of the norm | Individual Toilets |
| Payment for Toilet facilities | The JJ Cluster with toilet facilities makes payment for using the toilet and its O & M | Individual Toilets | The colony with community toilets makes payment for using the toilet and its O & M | Individual Toilets |
| Preference for Toilet Facilities | Individual | Individual with sewer connections | Individual | Individual with sewer connections |
| **DRAINAGE** | | | | |
| Type of Drainage Facilities | Open *Kutcha* and Open *Pucca* | Open *Pucca* | Open *Kutcha* | Open Pucca |

| | |
|---|---|
| Frequency of Cleaning of Drains | Frequency of cleaning drains is weekly for majority of households |
| Level of Satisfaction | Low level of satisfaction with drainage system and its maintenance in all settlements |
| **SOLID WASTE MANAGEMENT** | |
| Type SWM System | Absence of an organised system of garbage collection |
| Frequency of clearance of Garbage | Infrequent clearance of garbage |
| **HEALTH STATUS** | |
| Health status – Children | Majority of the children are absent from school for 3 days to one week due to illness in the last six months |
| Health Status – Adults | Majority of the adults miss work for more than one week in six months |

CHAPTER 5

# Recommendations

## 5.1 Current Situation

### 5.1.1 Overview

Like other metropolitan cities, Delhi has been coping with a rapid growth of population, mixed land use in older settlements, lack of housing and other amenities, mushrooming growth of informal settlements and informal economic sector and a heavy influence of the Western notion of urban planning. The growth rate of population in the Delhi Urban Area (4.6%) is much higher than all cities in India and neighbouring Asian countries; it is also much higher than the national average growth rate of urban population in the country (2.34%). Delhi has the highest density of the population in the country, 6,352 persons per sq km Even when the current national trend of urbanisation shows a decline, the growth rate in Urban Delhi increases unabated, adding, on an average, almost 1,500 persons every day to the city's population. As revealed by this study, it is the degenerated peripheries, with little or no services, that absorb most of the growing population, added by migrants, ousted population from the core city and of course, the internal growth of population. In the two wards under study – Bhalaswa and Badli, 97 and 80 per cent population, respectively, reside in informal settlements.

### 5.1.2 City of Urban Rich and Poor: Different Parameters of Governance and Human Rights

The State armed with numerous policies, legislations, judiciary system and a complex set of governance institutions have failed miserably to provide shelter and services to the largest proportion of the city population living in densely populated unplanned informal settlements. The residents of these settlements are largely unorganised, vulnerable and lack access to basic civic services. Absence of entitlement rights over land renders them non-formal citizens of the city, while the cities largely thrive on their services. This apparent contradiction if not resolved through legitimate democratic means and pro-poor city planning, will continue to find solutions outside the periphery of law in the 'informal' domain of the city. Unless the urban poor are made an integral part of the formal city and its management process, their exiting situation of deprivation and denial will keep aggravating the violation of universal human rights standards.

The existing situation in slums of Delhi is in complete contrast to the global concerns, consensus and strategies that emerged in Habitat I & II as well as the universal declaration of human rights to which India is a signatory. These international agreements recognise the people's right to shelter, their participation in local governance, right to life and dignity. In reality, most policies, legislations and programmes of land control, urban planning, infrastructure development have gone in the favour of citizens of planned city and, in order to develop the city for the rich and middle class there has been long history of relocation of poor from the planned areas.

None of these populations is directly benefited either by Delhi Government's *Bhagidari* – Government-Citizen partnership programme, as this programme is not operational in informal settlements of Delhi, or by infrastructure development for better transport, water and sanitation facilities. Most of these infrastructure developments are directly targeting the

citizens of the formal city. Sanjha Manch study[1] shows that 40 per cent urban poor in Delhi use bicycles for which the dozens of flyovers are of no use. The infrastructure development for augmenting water supply of the city will obviously not ensure improved infrastructure and services in informal and underserved areas. Neither the privatisation of electricity, water and garbage disposal nor the golf club and water sports complex at Bhalaswa or multi-complexes and malls built on environmentally sensitive areas like southern ridge and the Yamuna bed for urban development will benefit the informal settlements of the urban poor in peripheral wards of the city. These few examples, out of many, clearly reveal where the most of states's resources are flowing and what state led urban development and management mean for the 70 per cent population of the city living in informal and underserved areas.

The programmes/schemes for the poor do not always reach the intended target for various reasons, including lack of practical approach to programme design; inadequate publicity and information dissemination of the schemes which also limits the level of awareness among target groups; poor implementation; and prevalence of middlemen and corruption.

### 5.1.3 Constraints

The complex institutional arrangement at city, state and central levels without any decentralisation; weak legislative bodies at city and state levels, complex and contradictory legislative and policy regime due to a long history of central control, and weak civil society interventions for improvement of governance of environmental services in slums are key limiting factors for any programming. Formal and informal legal status of different types of settlements in unplanned part of cities has particularly been challenging in the case of public infrastructure in the 'unauthorised settlements', because of their temporary status. These factors have also contributed to the failure of strategies for sustainable urban development and poverty reduction on several fronts, as noted by Eighth, Ninth and Tenth Planning Commission and a committee set up by NCTD to review the structure and working of the MCD in 2001.

### 5.1.4 Priority Needs in Informal and Gaps in Civil Society's Response

Many Participatory Needs Assessments, like the current one, with residents of representative informal settlements (unauthorised colonies, JJ clusters, resettlement colonies and urban villages) in various parts of Delhi have revealed that water and sanitation are the prioritised needs of the residents. On the contrary, water and sanitation is not the focus sector of intervention for the international and local NGOs working in slums of Delhi. It occupies an equally low priority with the urban local bodies and other agencies (Delhi Jal Board and Delhi Water Supply and Sewerage Undertaking). In recent decades, no urban programme dedicated to improving the water and sanitation situation in informal settlements has neither been planned nor implemented in Delhi.

The response of civil society organisations (CSOs) to urban poverty issues has been anything but adequate. Majority of the civil society interventions have been top down, donor driven and project based. Understandably due to lack of indigenous funding sources, the interventions of both local and international NGOs have been largely determined by the priorities of donors, and not the community. Most often a service provider approach forms the backbone of their programmatic interventions, largely concentrating on selected sectoral issues (such as health interventions and micro-credit). The interventions have been largely slum specific and isolated without analysing slum development in the context of city processes. None of the interventions by the civil society have explored the possibility of making the state accountable for addressing the needs of the poor, nor has there been any attempt to engage the local community and local city authorities in designing initiatives or to establish a dialogue between them for informing policies and government programmes.

Existing civil society networks that have tried addressing urban poverty with a holistic approach remain limited to action research, policy analysis and intensive community consultation. The attempts of the civil society organisations, at best, have been sporadic

[1] This City Is Ours, Report of Sanjha Manch Convention, 1999

and inconsistent. The approach to judicial interventions by civil society organisations has so far been time consuming and beyond the reach of poor. Insensitivity of the judicial system towards poverty and development issues is also a major undermining factor.

Small victories apart, interventions by many national and international NGOs through hundreds of projects in different slums and resettlement colonies in different phases of city's growth, especially, since the 70s have had little impact on state authorities and their policies for pro-poor urban governance. With regard to the current responses this study noted a lack of systemic or long-term enabling strategy to empower the urban poor community for effective participation in the local governance processes such as, assessing local needs and designing development initiatives; monitoring delivery of services against norms; and policy dialogue with state authorities for improved environmental conditions in informal settlements. Further, policies and programmes aimed at poverty alleviation and urban development are not conceptualised in the framework of universal human rights. Inconsistent strategies for negotiations with policy makers have prevented the urban poor to effectively bargain for their rights as envisaged in the universal human rights declaration and the Indian Constitution. There have not been any programmatic interventions for promoting and systemic strengthening of civil society networks for focused advocacy and collective initiatives either on the issue of land tenure security, environmental services and employment.

For the past four years, the Action Aid and NFI supported Sanjha Manch, a joint forum of more than 46 civil society organisations, has been trying to collect information and data, publish advocacy literature and mobilise communities for informed advocacy initiatives. The influence and impact of this initiative have, however, yet to be seen. Area based networks of CBOs such Nirman Majdoor Panchayat Sangam in Badli and Bhalaswa Lok Shakti Manch in Bhalaswa could be effective forums for ward level interventions, NGOs like Ankur and Nirman, working closely with the community for many years, could be potential key partners in these two wards.

## 5.2 Recommendations

Against this backdrop, the strategy for an intervening international agency like WaterAid India needs to be strategic and complimentary to the ongoing initiatives. Most recent participatory research with poor communities have indicated water and sanitation as the most prioritised needs. There is a complete absence of systemic intervention by local NGOs that can inform the infrastructure planning and reform processes. Unfortunately, many successful and tested approaches and strategies of Civil Society Organisations (CSOs) in other cities have gone unnoticed for adaptation and replication for long-term interventions for environmental improvements in slums.

This study recommends strategic intervention through networks of NGOs at the city/state, inter-ward and ward level to address the underlying causes of vulnerability of people living in informal settlements. For influencing issues like land tenure, pro-poor master plan, district plans and development programmes, a city level network and a forum for dialogue among key stakeholders will be required for improving the peripheral areas of the city. Unless improvement of peripheral areas in metropolis and other such cities get policy attention and committed resources under city master plan and five years plans of the state and the centre, no amount of small experimentations and short-term interventions can create any long-term impact. A serious dialogue among civil society, urban experts, sensitised city authorities and policy makers, along with other key stakeholders are required to work out other final details.

As a pilot initiative, it may be appropriate to adopt a bottom-up approach and ward level intervention to improve urban governance processes impacting environmental services in slums. Since bilateral and multilateral agencies like JBIC and World Bank, are already working with city authorities for infrastructure development and sector reform respectively, WaterAid India's bottom-up participatory process in informal settlements to inform the ongoing infrastructure development and sector reform processes, as well as for improving current environmental conditions, may be strategically complimentary. This will help to fill the current programmatic vacuum in the city for creating structured dialogue between civil society, city authorities and other key players on needs, requirements and current provision and current

status of environmental services in informal settlements. It will also help to understand how local residents participate in planning interventions, what they can contribute and what more they require to improve their environmental conditions.

WaterAid may like to build upon its past experiences of working with grassroot NGOs; adopting an integrated approach to environmental improvement. Further, for making urban governance responsive, initiatives such as "report card" for monitoring services, micro-planning and budget analysis at ward and city level can also be undertaken. The combined outputs of these methods will not only give negotiating power to the local community and CSOs, but will also create a powerful database for informing infrastructure development and sector reform processes.

The intervention will require partnership with local NGOs. The partner NGOs should be encouraged to form Civil Society Organisations (CSOs) network at the ward level to ensure their effective and proactive participation in micro-planning, using a report card for monitoring and ward level budget analysis of provisions for environmental up-gradation in slums. The ward level network of CSOs should facilitate dialogue and engagement between local communities, local authorities and elected representatives towards designing local development interventions on environmental services based on local prioritised needs. The community and local authorities through a joint exercise should assess the implementation of such plans, their achievements and the lessons learnt. Such processes would also require capacity building of CSOs in taking on ward level responsibilities vis-à-vis develop report cards for monitoring the environmental services, analyse the allocation and expenditure of budget at ward level and use the monitoring data for disseminating to all primary and secondary stakeholders and use the same data for creating an interface with other ongoing programmes of the city, policy makers (Ministry of Home, Ministry of Urban Development, Ministry of Poverty Alleviation, MCD, Lt. Governor and Delhi Government) and other key stakeholders of the city (CSOs, media, judiciary, corporate sector, academia and others).

The second phase of intervention, after a few years of stabilisation of initiatives, may focus on sustaining the community based organisation and their processes, apart from the forum created at city level. The most crucial addition in this phase of the programme could be community based monitoring of gaps in policies, legislations and institutional functioning. As these norms of provisions are much at variance with the criteria of Universal Human Right Standards, the bottom-up approach, a long enabling process of analysing and disseminating data and a continuous dialogue that may prepare a concrete ground for policy dialogue with city authorities.

### 5.2.1 Potential Location for Intervention: Away from Core of the City

The court orders and consequent frequent demolition and relocation of slums have shattered the confidence of informal settlers, especially the slum dwellers. Most relocated sites have come up in the periphery of Delhi urban area along with thousands of relocated hazardous industrial units and sanitary landfill sites.[2] This drive of cleaning the city of the poor and pollution has gained strength with support from the courts and administrative orders. This makes the rural periphery of Delhi the most vulnerable area while the pace of current and future urbanisation is maximum in these areas, as most of the development projects and industries have been planned in these rural hinterlands. This makes it the most obvious choice for future programmatic intervention.

In addition, more slum-settlers in central urban areas than in peripheral rural areas have invested in improving house stock, other physical infrastructure and accessing basic services, despite not having land tenure. Those living close to railway stations, and sites likely to be developed for big project do not invest much in developing infrastructure. Hence unless their land tenure is secured investment is not likely to come either from them or from the government. Those secured in resettlement colonies have shown great willingness and

[2] A. Kundu, A. Schenk and Dash, B. 2002. Changing role of state in urban governance, provision of basic amenities to poor in the context of unplanned growth in metropolitan peripheries of Delhi and Hanoi. New Delhi: Institute for Human Development.

capacities to invest and contribute through labour and cash to improve their living condition. Newly emerging semi government (such as HUDCO) agencies and private agencies have also come forward to invest in such areas. Many *in-situ* slums up-gradation projects in Delhi involving local NGOs and CBOs could be launched by the Municipal Corporation, DDA and central government; very few can be counted in peripheral slum areas in the last couple of decades.

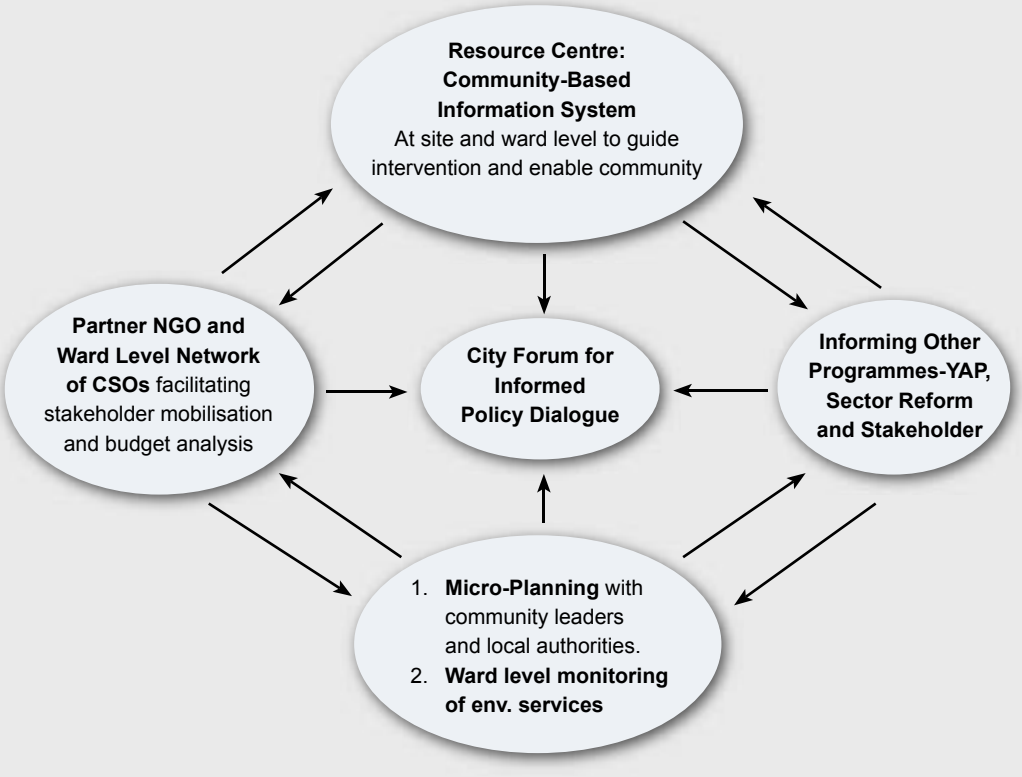
### 5.2.2 Partnership: Strategic Convergence of Strengths

Instead of current practice of partnership with many NGOs for implementing similar activities on ground, we recommend that WaterAid should engage with NGOs of different core competencies/complimentary strengths within the city as well as from other cities.

Apart from the implementing NGOs having the capacity to effectively mobilise communities the programme can involve organisations having expertise in mobilising city authorities for dialogue/interface between state agencies, CSOs and other stakeholder. The implementing NGOs must engage the CSOs of their ward and neighbouring ward in each of these activities for the multiplier impact of the programme.

Organisations having tested different bottom-up approaches to urban governance in different urban contexts such as micro-planning (SEEDS, Delhi), using report card for monitoring services (PAC, Bangalore), budget analysis (Disha, Ahmedabad and NCAS, Pune), Community Based Information System (NIUA/CURE, Delhi) could be involved for building capacity of implementing NGOs and community groups, apart from using their tested methodologies to highlight the gaps in different aspects of urban governance. Processes like micro-planning undertaken locally with community and local authorities can also suggests the way to address gaps and inform the government policies and programmes. These organisations, their tested methods and monitoring data from the fields, settlement and ward level plans for environmental improvement will together create a pressure on local, state and national level authorities. If this approach can demonstrate success in a difficult city like Delhi, it will definitely go a long way towards replicability in other urban situations.

**Advocating Inclusive Urban Governance: A Bottom-up Approach**



### 5.2.3 Specific Recommendations Emerging from the Findings of the Primary Research

| Sector/Issues | Level | Possible Interventions |
|---|---|---|
| **Legal status of informal colonies, land tenure and services** | | |
| | City level | Advocacy, Networking, policy, research and policy dialogue for pro-poor master plan, policies norms and programmes to ensure secured land tenure and services to people living in informal settlements. |
| Privatisation of water | City level | Advocacy Initiatives; representing the interests of the urban poor |
| Access to Potable water | Inter-ward level | Networking, research and compilation of monitoring information from ward level report card to influencing water distribution norms, infrastructure improvement for water supply |
| | Ward/site level | Local water resources – Facilitate the process of management of tanker supply by Delhi Jal Board through local NGOs and CBOs<br><br>Facilitating development of community based water management system in communities through the establishment of water user groups, etc |
| | | |
| Pollution of Groundwater | Inter-ward level | Undertake research to ascertain the impact of leaching from sanitary Landfill site on the groundwater. While communities have shared that the quality of groundwater is very poor no scientific study has been undertaken to ascertain the extent of damage to justify the removal of land fill sites. |
| **Sanitation** | | |
| Poor Maintenance of Community Toilets | City level | Advocacy initiatives to ensure adequate and quality services by the Municipal Government for maintenance of community toilets |
| | Ward/site level | Facilitate development of mechanisms for community based operation and maintenance of toilets |
| Improper disposal of waste from individual toilets | City level | Advocacy initiatives to ensure access to sewerage system; regular cleaning and desludging of septic tanks |
| | Ward/site level | Facilitate development of mechanisms for community based maintenance of disposal systems |
| Lack of specific to facilities for children, women and aged | City level | Advocacy initiatives to ensure that the design of community toilets ensures access to women, children, aged and handicapped |
| | | |
| **Solid Waste Management** | | |
| Inadequate and infrequent collection of waste | Ward/site level | Develop mechanisms for community based collection and management of local waste generated; this programme should create linkages with the rag pickers who are currently deriving their livelihood from the adjoining Bhalaswa Sanitary landfill site<br>IEC campaigns to educate communities about the |
| **Drainage** | | |
| Pollution of land and Groundwater by the Sanitary landfill site | City level | Undertake research to ascertain the impact of the sanitary landfill site on water and land. |
| Inadequate maintenance of drainage network | Ward level | Develop mechanisms for community based management of drainage system<br>IEC campaigns to prevent dumping of garbage into drains |
| | | |
| **Health** | | |
| Access to health facilities | City Level | Supporting advocacy initiatives of city level network |
| Low awareness levels about health and diseases | Local Level | IEC campaigns with informal communities |

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# Annexures

## Annexure 1

# Household Survey Form

## Survey Date :

## Slum Name :

## Name of Enumerator :

Information about Family

1. Name of Head of the Household

| 2. Address | House No. | Name of Slum | Name of Community |
|---|---|---|---|
| | | | |

3. Number of Family Members

| | | |
|---|---|---|
| | | |

| Sex | Adult | Child |
|---|---|---|
| Male | | |
| Female | | |

4. Occupation of Head of the Household

| Service | Self Employed | Unemployed | Others |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

5. Occupation Type:

| Regular | Irregular | Not Applicable |
|---|---|---|
| 1 | 2 | 3 |

**Household Information**

1. Ownership

| Owned | Rented |
|---|---|
| 1 | 2 |

2. Area of House (Ft.)

| <10x10 | 10x10 | 10x15 | 15x15 | >15x15 |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

3. No. of Rooms

| 1 | 2 | more than 2 |
|---|---|---|
| 1 | 2 | 3 |

4. Number of Floors

| G | G+1 | G+2 | More than G+2 |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

5. House construction

| Pucca | P & K | K |
|---|---|---|
| 1 | 2 | 3 |

6. Use of Household

| res. | res./comm | res./indus | others |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

7. Separate Space Within home for

| Bathing | Cooking | Toilet |
|---|---|---|
| 1 | 2 | 3 |

Basic Amenities

1. Water supply source

| own tap | shared | common | hand pump/bore well | well | others |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |

2. Supply (in hrs.)

| <1 | 1-3 | 3-5 | 5-10 | >10 |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

3. How much time does it take to fetch water?

| <15 min | 15-30 min | 30min-1hr | >1hr |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

4. Satisfaction in relation to quality of water:

| satisfied | some what satisfied | not satisfied |
|---|---|---|
| 1 | 2 | 3 |

5. How do you purify water?

| filter | allum | boil | none |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

6. Do you spend on water

| yes | no |
|---|---|
| 1 | 2 |

7. If yes, how much / month (in Rs.)

| <10 | 11-20 | 21-30 | 31-40 | >40 | Not applicable |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |

8. Whom do you make the payment to

| Municipality | private | committee | NA |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

**Toilet**

1. What is the toilet facility used by adult?

| | owned | shared | public | pay & use | at work place | mixed | NA |
|---|---|---|---|---|---|---|---|
| Male | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Female | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

2. What facility is used by children?

| private | shared | squatting | common | pay & use | open | drains | NA |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

3. If you own a toilet, what is the system of disposal?

| sewer line | septic tank | drainage line | NA | NR |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

4. Do you face any of these difficulties (In relation to public toilet)?

| it is far | long queue | unclean | no water | no electricity | not maintained well | other | none of the above | NA | NR |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

5. Do you make a payment for toilets?

| yes | no | NA | NR |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

6. If yes, how much do you pay per month (family)

| <15 Rs. | 15-30 Rs. | >30 Rs. | NA | NR |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

7. Whom do you make the payment to?

| Municipality | Pvt. | Sweeper | Committee/CBO | Own Sweeper | NA | NR |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

8. Do you think your local CBO can take responsibility for O&M of toilers?

| Yes | No | NA | NR |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

9. If no, why not?

| No CBO | CBO Not capable | Other | NA | NR |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

10. How much are you willing to pay for improved service ?

| 25-30 | 30-50 | 50-75 | >75 | NA | NR |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |

11. In future what toilet facility would you prefer?

| Pvt. | Public | Shared | Pay & use | NA | NR |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |

**Drainage**

1. What are the causes of waste water generation in your house hold?

| washing clothes | bathing | toilet | other | NR |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

2. What is the method of disposal of waste water

| outside home | in khadda | in nalla | NR |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

3. What is the drainage system in your colony?

| open kutcha | open pucca | closed kutcha | closed pucca | under ground | other | NR |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

4. Who cleans the drains?

| Municipality | Pvt. | Committee | Community | Self | NR |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |

5. How often are the drains cleaned?

| everyday | weekly | monthly | NR |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

6. Are you satisfied with cleaning of drains?

| satisfied | some what satisfied | not satisfied | NR |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

7. Do you make payment for cleaning drains?

| Yes | No | NR |
|---|---|---|
| 1 | 2 | 3 |

8. If yes, how much (in Rs.)

| <10 | 10-20 | >20 | NA | NR |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

9. Whom do you make the payment to?

| Municipality | Pvt | CBO Committee | Others | NA | NR |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |

**Garbage Disposal**

1. Where do you dispose the garbage?

| In lane | In drainage/SWD | In BMC dustbin | Collected from home | Open space | NA | NR |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

2. How far is the disposal place from home?(in minutes)

| <5 min | 5-10 min | >10 min | NA | NR |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

3. How often in the garbage picked up by MCBM?

| every day | once in a week | twice in a week | once in fifteen days | NR |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

4. What problems do you face near the garbage disposal site?

| Flies | mosquitoes | Smell | Rats | Filth | Others | No problem | NR |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

Health

1. Where do you go for treatment when ill?

| Government Dispensary | Pvt. Doctor dispensary | Govt. Hospital | Vaidya | Home remedies | NR |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |

2. Has there been any of these illnesses in you family in the last 6 months?

| | Malaria | Dengue | Jaundice | Cholera | Typhoid | Skin infection | Asthma | TB | Worms | NA |
|---|---|---|---|---|---|---|---|---|---|---|
| Adult | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Child | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

3. In the last 6 month how many days of school has the child missed due to illness?

| 3-5 | 5-7 | > 7 days | Not missed | NA |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

4. How many days has the adult missed work because of the illness?

| 3-5 | 5-7 | > 7 days | Not missed | NA |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

5. How much do you spend on health/monthly ( for family in Rs.)

| <100 | 100-200 | 200-500 | 500-1000 | 1000> |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

Signature of emunerator :_____

## Annexure 2

# Slum Profile Format

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Status of Slum | | | | | | | Date of Survey: / / 2004 | | |
| 1.1 | Name of the Slum | | | | | | | | | |
| 1.2 | Name of the Cluster | | | | | | | | | |
| 1.2 | Location of Slum (A rough sketch of the slum is attached) | | | | | | | | | |
| 1.3 | Bounded on North By | | | | | Bounded on South By | | | | |
| | Bounded on East By | | | | | Bounded on West By | | | | |
| 1.4 | Legal status of the Slum | | | Notified | Not Notified | Others | Land Ownership | | M / SG / CG / R / P | |
| 2 | Demographic and Socio-Economic Profile | | | | | | | | | |
| 2.1 | Population Composition | | | | | | | | | |
| | Population | Above 18 | Bet. 18 - 8 | Below 8 | Religious Composition(%) | | | | | |
| | Male | | | | | | | | | |
| | Female | | | | Caste Composition (%) | | | | | |
| 2.2 | Occupational Profile (%): | | | Un-employed | | Self Employed | | | Service | |
| 3 | Nature and Type of Housing | | | | | | | | | |
| 3.1 | Type of Housing: | | | | 3.2 | No. of Floors | | 3.3 | Use of Dwelling unit | |
| | Type | | | No. of units | | Type | No. Of units | | Use | No. of units |
| | Brick/RCC units (Pucca) | | | | | G | | | Residential | |
| | Tin, A/C, Plastic Roof & Walls (Kutcha) | | | | | G+1 | | | Commercial | |
| | 1/2 Bk. Wall and Tin,A/C,Plastic Roof | | | | | | | | Institutional | |
| | | | | | | | | | Mixed | |
| 3.4 | Average size of Dwelling Unit (sq.m.) | | | | | | | | | |
| 4 | Infrastructure Facilities | | | | | | | | | |
| 4.1 | Physical Infrastructure | | | | | | | | | |
| 4.1.1 | Water Supply in the slum | | | | | | | | | |
| 4.1.1.1 | Type of Connection | | Individual | Standpost | Shared by 10 households | | Tubewell | | Others (specify) | |
| 4.1.1.2 | Frequency of Water supply | | | 24 hours | Other(specify) | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 4.1.1.3 | Level of Satisfaction with the water supply | | | | Highly Satisfied | | Fairly Satisfied | | Not Satisfied | |
| 4.1.1.4 | Quality of water supplied | | | Good | Satisfactory | Bad | | | | |
| 4.1.1.5 | Revenue from water supply in this slum (amount in Rs) | | | | | | Agency Collecting Revenue | | | |
| 4.1.2 | Toilets | | | | | | | | | |
| 4.1.2.1 | Type of Toilet | | Individual | Shared | Public | Pay & Use | Open | Mobile | Other (specify) | |
| 4.1.2.2 | Electricity available in the units | | | Y / N | Water Supply in the units | | Y / N | | | |
| 4.1.2.3 | Constructed by | | | Maintained by | | | Operated by | | | |
| | Agency | No. of Blocks | No. of Seats | Agency | No. of Blocks | No. of Seats | Agency | No. of Blocks | No. of Seats | Payment Rs. per |
| | | | | | | | | | | |
| | | | | | | | | | | |
| 4.1.3 | Sewerage | | | | | | | | | |
| 4.1.3.1 | Type of Disposal System | | | Sewer line | Septic Tank | Soak Pit | Aqua Privy | Others(specify) | | |
| | | | | | | | | | | |
| 4.1.4 | Garbage | | | | | | | | | |
| 4.1.4.1 | System of Garbage Collection | | | Organised(specify type) | | | | | Dumping | |
| 4.1.4.2 | If garbage is dumped, where do they dump | | | | By lanes | Drains | Nalla | Open Area | Near Toilets | |
| 4.1.4.3 | Level of Satisfaction with Collection System | | | | Highly Satisfied | | Fairly Satisfied | | Not Satisfied | |
| 4.1.5 | Storm Water Drainage | | | | | | | | | |
| 4.1.5.1 | Type of Drainage System | | | Open Pucca I Open Kutcha | | | Covered Pucca | | Underground Drain | |
| 4.1.5.2 | Condition of Drainage Network | | | Functional | | Non Functional | | | | |
| 4.1.6 | Roads | | | | | | | | | |
| 4.1.6.1 | Type of Road | | Metalled | Cemented | | Brick Paved | | Stone Paved | | Kutcha |
| 4.1.7 | Electricity in the slum | | | | | | | | | |
| 4.1.7.1 | No. of Houses with Electric Connection | | | | | Houses without Electric Connection | | | | |
| 4.1.7.2 | Payment made to | | | | | | | | | |
| 4.2 | Social Infrastructure | | | | | | | | | |
| 4.2.1 | Schools | | | | | | | | | |
| 4.2.1.1 | Type | | No of units | Is there Anganwadi/Balwadi present in the settlement | | | | | | Y / N |
| | Primary | | | If yes, How many in number | | | | | | |
| | Middle | | | If yes, total how many children are enrolled | | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Higher Secondary | | | | | | | | | |
| 4.2.2 | Health | | | | | | | | | |
| 4.2.2.1 | Is there a PHC facility present within the settlement | | | | | Y / N | | | | |
| 4.2.2.2 | If No , Distance of the Nearest one | | | | | Distance to the Nearest Hospital | | | | |
| 4.2.2.3 | Major health ailments common in the settlement | | | | | | | | | |
| 4.2.3 | Community Facilities | | | | | | | | | |
| 4.2.3.1 | Is there a Community Hall | | | Y / N | If No, which space is used at community level | | | | | |
| 4.2.3.2 | Is there a Police Station/ Chowkey close to the Slum | | | | | Y / N | | | | |
| 4.2.3.3 | Is there a Fire Station Close to the Slum | | | | Y / N | | | | | |
| 4.3 | Social Dynamics | | | | | | | | | |
| 4.3.1 | Nature of Social Formation existing in the Settlement | | | | | Women Clubs | | | Youth Groups | |
| 4.3.2 | Dominant group in the settlement | | | | | | | | | |
| 4.3.3 | Is there a presence of CBO in the community | | | | Y/N | | | | | |
| 4.3.4 | Name of CBO(s) | | | | | | | | | |
| 4.3.5 | If yes, in what activities are they involved | | | | | | | | | |
| 4.3.6 | Give areas they can be involved in | | | | | | | | | |
| 4.3.7 | Is there a NGO working with the community | | | | Y / N | | | | | |
| 4.3.8 | If yes, name it and mention the sectors of its involvement | | | | | | | | | |
| 5 | Environmental Aspects | | | | | | | | | |
| 6 | Topographical Characteristics of the site | | | | | Flat | Gentle Slope | | Steep Slope | |
| | | | | | | Undulating | Others (Specify) | | | |
| 7 | Any Specific Environmental problem in the settlement | | | | | | | | | |
| | If Yes, mark the location | | | | | | | | | |

## Annexure 3

### Table 1
### Percentage of Households having Select Civic Amenities in Urban Areas as per Population Census

| India\ States\UTs | Electricity | | Toilet Facility | | Safe Drinking Water | |
|---|---|---|---|---|---|---|
| | 1981 | 1991 | 1981 | 1991 | 1981 | 1991 |
| **India** | **62.5*** | **75.8*** | **58.2*** | **63.9**** | **75.1*** | **81.4**** |
| | **61.6** | **75.9** | **57.4** | **63.6** | **74.1** | **81.6** |
| Andhra Pradesh | 52.2 | 73.3 | 44.1 | 54.6 | 63.3 | 73.8 |
| Arunachal Pradesh | 64.3 | 81.0 | 64.6 | 75.1 | 87.9 | 88.2 |
| Assam | 0.0 | 63.2 | 0.0 | 86.1 | 0.0 | 64.1 |
| Bihar | 50.1 | 58.8 | 53.0 | 56.5 | 65.4 | 73.4 |
| Goa | 0.0 | 0.0 | 49.5 | 55.8 | 52.3 | 61.7 |
| Gujarat | 74.4 | 83.0 | 60.1 | 65.7 | 86.8 | 87.2 |
| Haryana | 82.2 | 89.1 | 58.1 | 64.3 | 90.7 | 93.2 |
| Himachal Pradesh | 89.4 | 96.2 | 55.1 | 60.0 | 89.6 | 91.9 |
| Jammu & Kashmir | 92.2 | 0.0 | 64.5 | 0.0 | 86.7 | 0.0 |
| Karnataka | 62.0 | 76.3 | 53.3 | 62.5 | 74.4 | 81.4 |
| Kerala | 54.6 | 67.7 | 59.1 | 72.7 | 39.7 | 38.7 |
| Madhya Pradesh | 56.4 | 72.5 | 52.7 | 53.0 | 66.6 | 79.4 |
| Maharashtra | 70.5 | 86.1 | 59.4 | 64.5 | 85.6 | 90.5 |
| Manipur | 48.3 | 75.5 | 62.7 | 70.2 | 38.7 | 52.1 |
| Meghalaya | 59.6 | 83.0 | 70.2 | 85.7 | 74.4 | 75.4 |
| Mizoram | 50.1 | 85.5 | 24.5 | 84.4 | 8.8 | 19.9 |
| Nagaland | 58.4 | 75.6 | 65.3 | 75.1 | 57.2 | 45.5 |
| Orissa | 51.7 | 62.1 | 41.9 | 49.3 | 51.3 | 62.8 |
| Punjab | 85.4 | 94.6 | 64.8 | 73.2 | 91.1 | 94.2 |
| Rajasthan | 63.7 | 76.7 | 56.5 | 62.3 | 78.6 | 86.5 |
| Sikkim | 71.8 | 92.4 | 53.2 | 77.7 | 71.9 | 92.9 |
| Tamil Nadu | 61.6 | 76.8 | 51.3 | 57.5 | 69.4 | 74.2 |
| Tripura | 92.1 | 80.4 | 95.7 | 96.3 | 67.9 | 71.1 |
| Uttar Pradesh | 54.6 | 67.8 | 62.1 | 66.5 | 73.3 | 85.8 |
| West Bengal | 57.9 | 70.2 | 77.7 | 78.8 | 79.8 | 86.2 |
| **Union Territories** | | | | | | |
| Andaman & Nicobar Islands | 78.2 | 90.6 | 70.9 | 5.7 | 91.9 | 90.9 |
| Chandigarh | 85.5 | 85.5 | 78.5 | 79.8 | 99.4 | 97.7 |
| Dadra & Nagar Haveli | 67.7 | 87.6 | 42.8 | 65.1 | 54.3 | 91.0 |
| Daman & Diu | 85.9 | 95.5 | 42.9 | 45.8 | 67.0 | 86.8 |
| Delhi | 74.9 | 81.4 | 68.0 | 66.6 | 94.9 | 96.2 |
| Lakshadweep | 96.4 | 99.1 | 31.6 | 64.7 | 3.6 | 18.8 |
| Pondicherry | 58.1 | 71.7 | 41.5 | 50.0 | 84.2 | 86.1 |

Source: Household Tables Census of India, 1981 and 1991.

(*) Excludes Assam: (**) Excludes Jammu & Kashmir

## Table 2a
## Percentage of Households having Access to Select Civic Amenities in Urban Areas as per National Sample Survey

| States | No Latrine | | | Service Latrine | | |
|---|---|---|---|---|---|---|
| | 1983 | 1988-89 | 1993 | 1983 | 1988-89 | 1993 |
| **India** | **36.8** | **31.1** | **30.6** | **18.1** | **11.7** | **7.4** |
| Andhra Pradesh | 51.8 | 41.5 | 36.8 | 12.4 | 6.7 | 3.3 |
| Assam | 7.0 | 6.4 | 7.0 | 36.3 | 18.7 | 14.7 |
| Bihar | 45.2 | 39.0 | 35.1 | 13.4 | 5.9 | 7.2 |
| Gujarat | 34.1 | 26.1 | 27.2 | 8.1 | 3.1 | 0.8 |
| Haryana | 42.8 | 37.1 | 31.6 | 34.1 | 20.1 | 7.5 |
| Himachal Pradesh | 39.1 | 43.8 | 27.0 | 24.7 | 15.3 | 5.3 |
| Jammu & Kashmir | 20.7 | 21.7 | 32.1 | 65.3 | 49.8 | 26.7 |
| Karnataka | 44.2 | 36.0 | 35.2 | 5.5 | 1.8 | 2.1 |
| Kerala | 26.7 | 18.7 | 15.7 | 2.6 | 0.3 | 0.2 |
| Madhya Pradesh | 47.5 | 45.6 | 43.3 | 22.4 | 13.4 | 9.9 |
| Maharashtra | 26.6 | 23.2 | 23.1 | 14.0 | 6.8 | 2.9 |
| Manipur | 1.9 | 0.0 | 5.1 | 31.8 | 0.0 | 11.1 |
| Nagaland | 3.2 | 6.2 | 0.9 | 51.4 | 6.6 | 28.2 |
| Orissa | 56.1 | 49.8 | 55.4 | 12.9 | 5.9 | 5.8 |
| Punjab | 39.4 | 31.0 | 21.1 | 28.5 | 17.3 | 7.1 |
| Rajasthan | 49.1 | 38.6 | 37.2 | 18.9 | 13.1 | 7.3 |
| Sikkim | 28.4 | 9.8 | 8.5 | 10.2 | 10.4 | 28.4 |
| Tamil Nadu | 47.6 | 40.1 | 36.1 | 15.5 | 10.3 | 6.4 |
| Uttar Pradesh | 33.6 | 28.6 | 32.5 | 39.3 | 31.4 | 23.5 |
| West Bengal | 13.3 | 17.5 | 21.2 | 16.5 | 7.5 | 5.6 |
| **Union Territories** | | | | | | |
| Andaman & Nicobar Islands | 30.4 | 27.9 | 23.0 | 26.1 | 16.2 | 5.2 |
| Chandigarh | 14.3 | 17.9 | 11.3 | 3.7 | 1.3 | 0.0 |
| Dadra & Nagar Haveli | 0.0 | 18.1 | 30.7 | 0.0 | 0.0 | 4.2 |
| Delhi | 27.3 | 18.7 | 29.4 | 14.1 | 17.7 | 11.1 |
| Mizoram | 10.3 | 0.1 | 0.4 | 3.7 | 5.3 | 0.1 |
| Pondicherry | 66.5 | 60.5 | 19.3 | 4.5 | 3.5 | 3.6 |

Source : Based on data from National Sample Survey Organisation, 38th, 44th and 49th Rounds.

## Table 3b
## Percentage of Households Covered by Amenities in Different Size Class of Urban Centres in 1991

| Class | Electricity | Drinking Water | Toilets | All Amenities | No Amenities |
|---|---|---|---|---|---|
| Class I | 80.69 | 84.36 | 73.67 | 59.45 | 3.45 |
| Class Ia | 74.84 | 81.00 | 63.08 | 49.01 | 5.31 |
| Class Ib | 78.01 | 77.28 | 63.92 | 49.13 | 5.97 |
| Class Ic | 82.57 | 86.14 | 77.69 | 63.51 | 2.65 |
| Class II | 73.50 | 79.17 | 57.58 | 44.16 | 6.26 |
| Class III | 65.69 | 75.45 | 49.56 | 35.20 | 9.12 |
| Class IV | 62.19 | 73.84 | 43.08 | 30.38 | 11.47 |
| Class V | 59.19 | 72.18 | 38.75 | 27.82 | 13.91 |
| Class VI | 69.72 | 78.59 | 47.44 | 37.52 | 9.31 |
| Urban India | 76.51 | 81.84 | 66.43 | 52.46 | 5.17 |

Source: Unpublished Household Tables (available in computer floppies) from Population Census (1991)

## Annexure 4

| Urban Scenario | Policies | | Legislation | | Institutions | | Remarks |
|---|---|---|---|---|---|---|---|
| | National | Delhi | National | Delhi | National | Delhi | |
| 1950 | **First National Plan*** (1951–56)– Rehabilitation of refugees/migrant (Delhi and Chandigarh)<br><br>**Second* National Plan** (1957–61) proposed planned development-introduction of Master plan | **–** Rehabilitation and township development in low lying areas – Nagars | . Requisitioning and Acquisition of Immovable Property Act, 1952<br>Central Slum (Clearance and Improvement) Act, 1955 | . Panchayati Raj Act, 1956 in rural areas<br><br>. Delhi Development Act 1957<br><br>. MCD and NDMC Act, 1957 | 1952– Ministry of Works, Housing & Supply | **1952–** Self-governing Part 'C' state with a Legislative Assembly of 48 members<br><br>**1956–** Delhi became Union Territory, hence, no local legislative body | *Housing schemes for poor govt. and municipal employees, Industrial housing scheme, no housing loans to, instead state govt. was assisted for housing schemes<br>The Industrial Housing Scheme was widened to cover all workers.<br>Three new schemes-Rural Housing, Slum Clearance and Sweepers Housing. |
| 1960 | **Third and Fourth Plans** decongesting city for planning and developing small town for middle, housing for middle class housing– Gandhinagar, Bhubaneshwar | Master Plan, 1962*<br><br>JJ Removal scheme, 1960–67 (80 sq. yard plot<br><br>26 Industrial sites | | | | **1966–80-1983–90**<br><br>Metropolitan Council with not empowered for making legislation or exercising authority over local institutions | *Jaundice and epidemic in '58 for sewer water got mixed with drinking water |
| 1970 | **Fourth and Fifth Plans**<br>Earlier emphasis continued, planning the spatial location of economic activity was introduced-emphasis shifted from housing for poor to environmental services | Major Resettlement Programme, 1975–76 (25 sq. yards)-2,500 people in 2.1 hec.<br><br>EIUS introduced | The Public Premises (Eviction of Unauthorised Occupants) Act, 1971<br><br>The Urban Land (Ceiling & Regulation) Act, 1976 | Delhi Urban Art Commission Act, 1973 | | | |

| Urban Scenario | Policies | | Legislation | | Institutions | | Remarks |
|---|---|---|---|---|---|---|---|
| | National | Delhi | National | Delhi | National | Delhi | |
| 1980 | **Sixth Plan** (1980–85) targeted smaller, medium and intermediate town for integrated provision of services- (IDSMT) was launched<br>**Seventh Plan** (1985–90). First time plan explicitly recognised the problems of the urban poor, (UBSP) was launched<br>**–** Global Shelter Strategy (GSS), National Housing Policy (NHP)-1988<br>**–** Urban employment (NRY, PMRY) | 1985–86<br>Prayog Vihar– on-site upgradation, site located near work place and transportation available –four sites<br><br>Master Plan –1985 – all aspects of development, emphasis on shifting infrastructure project out of NCR. | | . National Capital Region Planning Board Act, 1985<br>. Delhi Apartment Ownership Act, 1986 | 1985– Ministry of Urban Development | | *A network of Building Centres |
| 1990 | **Eighth Plan and Ninth Plans** (1992–97 and 1998–2002)– Decentralisation of governance, first time explicitly recognised the role and importance of urban sector for the national economy- emphasis shifted to Employment for poor-introduced NSDP, SJSRY, Valmiki Ambedkar Malin Basti Awas Yojana<br>- Draft National Slum Policy (1999), | Major Relocation in late nineties (18 to 12 sq.yards) | Constitution (Seventy-Fourth Amendment) Act 1992<br><br>The Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act, 1993<br><br>The Urban Land (Ceiling & Regulation) Repeal Act, 1999 | National Capital Territory Delhi (1992)<br><br>Delhi Rent Act 1995 | 1995– Ministry of Urban Affairs & Urban Employment & Poverty Alleviation<br><br>1999– Ministry of Urban Development separated from Ministry of Poverty Alleviation | **1992–** GNCTD Act, and formation of assembly<br>**1996–**electricity supply went to DVB (under GNCTD)<br>**1996**–water supply to DJB<br>**1998**– Bill for full statehood<br>**2001**– Delhi Assembly passed resolution and sent to center<br>**2003–** Bill for full statehood<br>**2004–** Standing com. Refused full statehood | |
| 2000 | **Tenth Plan** Added emphasis on Urban Governance and continuing emphasis on shelter, sanitation and employment | Relocation continues | | Proposed Delhi Real Estate Development Regulation Bill to promote and regulate the activities of private colonies and builders | Ministry of Urban Development again bifurcated from the Ministry of Urban Poverty Alleviation | | |

## Annexure 5

### External Assistance for Shelter

The following international assistance for housing and infrastructure projects have been sanctioned to HUDCO to enable them to further provide loan assistance to various borrowing agencies.

- Kreditanstalt fur Wiederaufbau (KfW), West Germany provided a loan assistance totaling DM 170 mn to HUDCO for undertaking housing schemes for EWS and Low-cost Sanitation Schemes.
- KfW has sanctioned an assistance of DM 10 mn to HUDCO for Building Centre programmes in India
- KfW has provided a loan assistance of DM 25 mn to Housing Development & Finance Corporation (HDFC) for financing EWS housing programmes and has committed a further grant of DM 30 mn to HDFC for low-cost housing programme and supporting urban infrastructure.
- A line of credit amounting to Yen 6788 (Rs 1.26 bn) from OECF has been sanctioned to HUDCO for city water supply projects of Sholapur and New Bombay.
- Another line of credit Yen 8670 mn has been committed by OECF to HUDCO for infrastructure development projects in several States. HUDCO has already received Rs 0.4 bn as first tranche under this credit line.
- The International Bank for Reconstruction and Development has sanctioned a grant of US$ 1 mn to HUDCO for strengthening its infrastructure operations. The grant will be utilised mainly for restructuring HUDCO's infrastructure wing so as to enable them to prepare urban development projects to be financed by World Bank.
- Asian Development Bank (ADB) has sanctioned loan assistance of US$ 100 mn to HUDCO for financing infrastructure projects.

## WaterAid – Water for All

WaterAid is an International NGO, established in 1981, in response to the United Nations declaration of the Water and Sanitation Decade, 1980–90, to enable better access of poor communities to adequate, safe water. WaterAid remains the UK's only major charity dedicated exclusively to the provision of safe domestic water, sanitation and hygiene education to the world's poorest people. WaterAid works in 15 countries across Asia and Africa, through local organisations and communities, helping them set up low-cost, sustainable projects using appropriate technology that can be managed by the community itself. WaterAid also seeks to influence the water and sanitation policies of other key organisations, such as governments, to secure and protect the right of poor people to safe, affordable water and sanitation services.

## WaterAid in India

WaterAid began working in India in the latter part of the 1980s with a few small projects and has since grown in strength and coverage. Today, WaterAid works in more than 10 states with three regional offices in Bhopal, Bhubaneshwar and Bangalore, in partnership with local NGOs and government departments and ministries that seek assistance in the specific areas of rural and urban water supply, sanitation and hygiene promotion. Community sustained improvement in drinking water and sanitation has been WaterAid's watchword in all its programmes.

Different models of community participation and management, of both rural and urban water supply and sanitation, alternate delivery mechanisms, school hygiene promotion programmes, water conservation and recharge measures have been demonstrated to the sector. These projects have a strong partnering component with state governments and departments and have proved to be the inspiration behind successful replications in other states. A vast array of publications, including training manuals for development workers, issue sheets and concept papers for advocacy initiatives and IEC material have been jointly developed with NGO partners and are in wide circulation.

WaterAid has participated in collaborative initiatives with the government and other agencies including the Water Supply and Sanitation Collaborative Council (WSSCC), the Water and Sanitation Programme (WSP) of the World Bank, UNICEF and DFID. Alliances are important for core programming concerns of rural and urban programming for water and sanitation, Integrated Water Resources Management and Networking with a range of government departments and government organisations, at the national and regional levels in India. WaterAid India is committed to making its own contribution to the MDG challenge and is open to exploring ways of partnering with all stakeholders for achieving water and sanitation for all.


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WaterAid

**WaterAid – water for life**
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