Gender Responsive Budget Analysis of Urban Development Sector

Darshini Mahadevia
Neha Bhatia
Ritika Sebastian

CUE Report
April 2017

CEPT UNIVERSITY
CENTRE FOR URBAN EQUITY

CEPT University
Kasturbhai Lalbhai Campus, University Road, Navrangpura, Ahmedabad-380009

Gender Responsive Budget Analysis of Urban Development Sector

Darshini Mahadevia
(Director, Centre for Urban Equity and Professor, Faculty of Planning, CEPT University)

Neha Bhatia
(Research Associate, Centre for Urban Equity, CEPT University)

Ritika Sebastian
(Research Associate, Centre for Urban Equity, CEPT University)

CUE Report
April 2017

Centre for Urban Equity (CUE)

CEPT UNIVERSITY
CENTRE FOR URBAN EQUITY

About Centre for Urban Equity (CUE)

CUE was established at CEPT University in 2009, evolving from the Urban Poverty Alleviation (UPA) Cell established in 2008. CUE advocates a human-centred and equitable urban development paradigm. CUE undertakes research and advocacy; conducts training and capacity-building; imparts education; and networks with stakeholders on various aspects of human settlements with a focus on urban equity.

Contact

Centre for Urban Equity (CUE)
CEPT University
Kasturbhai Lalbhai Campus
University Road, Navrangpura
Ahmedabad - 380009, India
Email: cue@cept.ac.in
Website: www.cept.ac.in/cue

CUE Working Paper Series

Disclaimer

Abstract

The study began with exploration of the prevalent methods used to conduct a Gender Responsive Budgeting exercise – three-way categorization as proposed by Rhonda Sharp, African Model (five-step approach) and seven tools suggested by Diane Elson. However during course of this research, it was found that these tools may not directly apply to our focus area – Urban Development. Thus, the analytical framework for this study has been built on the concept of Caroline Moser's 'Triple Role of Women' which explains the gender division of labour and Maxine Molyneaux's 'Practical and Strategic Gender Needs' framework which links gender with development. Based on these theoretical frameworks, gender specific needs were identified for selected sub-sectors (water, sanitation, housing and public transportation) in the urban context. Further, indicators and parameters for assessing performance of each sub-sector through gender lens were identified and assessed through primary/ secondary data in two case study cities in India - Bhopal and Pune. The study has also used the Benefit Incidence Analysis (BIA) tool which provides a comparative assessment of the extent to which the case study cities' budgets are gender-responsive.

Acknowledgements

The authors would like express their gratitude to the officials at the Urban Administration and Development Department (UADD), Women and Child Development Department (WCD) of Government of Madhya Pradesh, Madhya Pradesh Housing and Infrastructure Development Board (MPHIDB), Bhopal Municipal Corporation (BMC), Bhopal Development Authority (BDA), Bhopal City Link Limited (BCLL) and organizations – Aarambh, Muskaan, National Centre for Human Settlements and Environment (NCHSE), Sangini and Sanket at Bhopal and officials at the Pune Municipal Corporation (PMC), Pune Mahanagar Parivahan Mahamandal Ltd. (PMPML) and organizations – Bharti Vidyapeeth (College of Architecture), CHF India Foundation (CHF-IF), INTACH, ITDP, Janwani, Kagad Kach Patra Kashtakari Panchayat (KKPKP), Parisar, Mashal, Solid Waste (Collection and Handling) Cooperative (SWACH) at Pune for extending their support for this study. We are also grateful to the residents of the informal settlements in Bhopal and Pune. The research also owes to the in-house team – Tejal Patel, Vishal Darji and Neesha Parikh - at the Centre for their support during various phases of this research. We would also like to thank Cally Hardy, an intern from University of California, Los Angeles (UCLA), for her contributions to the study.

Contents

Acronyms

ACA	Additional Central Assistance
ADB	Asian Development Bank
AIF	Area Improvement Fund
AMRUT	Atal Mission for Rejuvenation and Urban Transformation
BCLL	Bhopal City Link Limited
BDA	Bhopal Development Authority
BHEL	Bharat Heavy Electricals Limited
BIA	Benefit Incidence Analysis
BMC	Bhopal Municipal Corporation
BPMC	Bombay Provincial Municipal Corporations
BRC	Bulk Refuse Carrier
BRTS	Bus Rapid Transit System
BSUP	Basic Services to the Urban Poor
CAA	Constitutional Amendment Act
CBD	Central Business District
CDP	City Development Plan
CEDAW	Convention on the Elimination of All Forms of Discrimination on Women
CIF	Community Initiative Fund
CMP	Comprehensive Mobility Plan
CPA	Capital Project Administration
CPCB	Central Pollution Control Board
CSP	City Sanitation Plan
DAWN	Development Alternatives with Women for a New Era
DFID	Department for International Development
DMIC	Delhi Mumbai Industrial Corridor
DPR	Detailed Project Report
DU	Dwelling Unit
FGD	Focus Group Discussion
FSI	Floor Space Index
GAD	Gender and Development
GBC	Gender Budget Cell
GBS	Gender Budget Statement
GDI	Gender Development Index
GoI	Government of India
GoM	Government of Maharashtra
GoMP	Government of Madhya Pradesh
GRB	Gender Responsive Budgeting
HH	Household
HPEC	High Powered Expert Committee
HUDCO	Housing and Urban Development Corporation Limited

ICT	Information and Communication Technology
IMF	International Monetary Fund
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
KCB	Khadki Cantonment Board
KKPKP	Kagad Kach Patra Kashtakari Panchayat
lpcd	Litres per capita per day
MDG	Millennium Development Goals
MHADA	Maharashtra Housing and Area Development Authority
MHT	Mahila Housing SEWA Trust
MLD	Million litres per day
MoEF	Ministry of Environment & Forests
MoHUPA	Ministry of Housing and Urban Poverty Alleviation
MoRTH	Ministry of Road Transport and Highways
MoUD	Ministry of Urban Development
MPHIDB	Madhya Pradesh Housing and Infrastructure Development Board
MPUIIP	Madhya Pradesh Urban Infrastructure Investment Programme
MPUSP	Madhya Pradesh Urban Services for Poor
MT	Metric Tonnes
MWCD	Ministry of Women and Child Development
NGO	Non-governmental Organization
NIPFP	National Institute of Public Finance and Policy
NMT	Non-motorised Transport
NRCP	National River Conservation Programme
NUTP	National Urban Transport Policy
OBC	Other Backward Classes
OHSR	Over-head Service Reservoir
PCB	Pune Cantonment Board
PCE	Per Capita Expenditure
PCMC	Pimpri-Chinchwad Municipal Corporation
PHED	Public Health Engineering Department
PMAY	Pradhan Mantri Awas Yojana - Housing for All (Urban)
PMC	Pune Municipal Corporation
PMPML	Pune Mahanagar Parivahan Mahamandal Ltd.
PMT	Pune Municipal Transport
PMU	Project Management Unit
PPSA	Poverty Pockets Situation Analysis
RAY	Rajiv Awas Yojana
RCV	Resident Community Volunteer
RTO	Regional Transport Office
SC	Scheduled Castes
SCP	Smart City Plan
SDG	Sustainable Development Goal
SESI	Slum Environment Sanitation Initiative
SEWA	Self Employed Women’s Association

SFCPoA	Slum Free City Plan of Action
SHHP	State Housing and Habitat Policy
SHWAAS	Slum Sanitation and Health Welfare Advanced Approach System
SJSRY	Swarna Jayanti Shahari Rozgar Yojana
SLB	Service Level Benchmark
SNP	Slum Networking Programme
SPV	Special Purpose Vehicle
SRA	Slum Rehabilitation Authority
SRS	Slum Rehabilitation Scheme
ST	Scheduled Tribes
STP	Sewage Treatment Plant
SWACH	Solid Waste (Collection and Handling) Cooperative
SWM	Solid Waste Management
TDR	Transferable Development Right
TG-12	Technical Group on Urban Housing Shortage (2012-17)
TPD	Tonnes per day
UADD	Urban Administration and Development Department
UIG	Urban Infrastructure and Governance
UK	United Kingdom
ULB	Urban Local Body
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
UWSEIP	Urban Water Supply and Environmental Improvement Project
WAD	Women and Development
WCP	Women's Component Plan
WID	Women in Development
WTP	Water Treatment Plant
VAMBAY	Valmiki Ambedkar Awas Yojana
VAW	Violence against Women
YUVA	Youth for Unity and Voluntary Action

Terminology

Adda	Base/ den (generally used for illicit activities - gambling, liquor etc.)
Adivasis	Tribes
Anganwadi	Government sponsored centres for children in the age-group of 0-6
Chowk	Common square within the settlement
Ghanta gaadi	Door-to-door waste collection cart
Katcha	Temporary
Khadan	Stone quarry
Nallah	Open drain
Patta	Land rights
Pucca	Permanent
Rein baseras	Shelter homes
Swachh Bharat	Clean India
Wadas	Traditional residential buildings in Pune

1. Introduction

1.1. About the Study

Globally, Gender Responsive Budgeting (GRB) has emerged as an important tool in the on-going struggle to make budgets and policies more gender responsive. From just one country in the mid-1980s to over 90 countries, the last two decades have witnessed an overwhelming endorsement of GRB as a valuable tool for engendering budgets and policies all over the world.

Since 2004-05, Government of India (GoI) has taken various steps to institutionalise GRB in the country. Beginning with introduction of Gender Budget Statement (GBS) in the year 2005-06 which aimed to reflect the quantum of budgetary allocations for programmes/ schemes that substantially benefit women; setting up of Gender Budget Cells (GBCs) which serve as focal points for mainstreaming gender through GRB; and conducting several capacity building workshops to orient officials on GRB. Following the adoption of GRB at national-level, several states have also undertaken measures, such as introducing GBS etc., to institutionalise GRB at sub-national level.

Despite such noteworthy efforts, it is increasingly argued that the potential of GRB as a tool to mainstream gender issues remains largely untapped in India. One of the most fundamental reasons is the limited application of GRB at the sectoral level. Since it is within sectors that national policies are translated into specific programmes and interventions; it is imperative to ensure that sector-specific plans and budgets are developed, implemented and monitored in a gender responsive manner. For GRB to be meaningful it is important to invest in purposive gender planning at the sectoral level, i.e. identifying gender gaps in the sector and then delineating prioritized action points to address the gender gaps.

This study was conceived of in the absence of any sectoral application of GRB. As an important step towards gender mainstreaming, such an exercise was proposed for Urban Development sector. The study began with an aim to pursue '*purposive gender planning*'.[1] Based on nuanced understanding of gender issues in the Urban Development sector, this study has attempted to undertake GRB exercise of the urban sector in India. Given India's federal structure, any attempt to engender budgets will achieve little success unless focused efforts are made at the sub-national level. The lowest tier of governance in urban areas is the Urban Local Body (ULB), which is the main focus of this study. Since a diversity of institutions are involved, from central government to state and multiple parastatal agencies along with ULB, this study takes the view that by focusing on the ULB will enable us to capture involvement of multiple institutions and agencies. The analysis proceeds by selecting four core sub-

[1] For GRB to be meaningful, it is important to invest in purposive gender planning at the sectoral level, i.e. identifying gender gaps in the sector and then delineating prioritized action points to address these gender gaps.

sectors in the urban areas: Water, Sanitation, Housing and Public Transportation. For the purpose of this study, two cities - Bhopal from Madhya Pradesh and Pune from Maharashtra - have been identified as the case study cities for this exercise.

1.2. Objectives

The objectives of this study are as follows:

- Conduct a thorough analysis of urban development sector from a gender lens.
- Assess the extent to which current urban development policies and schemes address gender issues in the urban development sector. This includes an analysis of relevant central and state governments' policies and schemes with respect to their design, budgets (allocations and expenditure) and implementation from a gender lens.
- Recommend specific changes at the level of policies and schemes to make them more responsive to the concerns and needs of women.
- Assess the extent of current budgetary allocation and expenditures being incurred by the ULBs/ involved parastatal agencies from gender lens in the two case study cities.

1.3. Approach

This study began with the exploration of the prevalent methods used to conduct a GRB exercise – three-way categorization as proposed by Rhonda Sharp, African Model (five-step approach) and seven tools suggested by Diane Elson (For details, see Chapter 3). However during the course of this research, it was found that these tools may not directly apply to our focus area. Thus, our analytical framework has been built on concept of Triple Role of Women – reproductive work, productive work and community management work (Moser 1993) – explaining the gender division of labour and Maxine Molyneaux's practical and strategic gender needs framework which links gender with development. Based on these theoretical frameworks, for each sub-sectors in urban context gender specific needs were identified. Further for each sector, indicators and parameters for assessing the performance of each sector through gender lens have been done through primary/ secondary data in both cities. The Benefit Incidence Analysis (BIA) tool that enables a comparative assessment of the extent to which the case study cities' budgets are gender-responsive has supplemented the performance assessment of each sector.

1.4. Structure of Report

Following this brief introduction, the report has been structured as follows: The second chapter outlines the scope of this study and details the methodology adopted as part of our research in order to undertake GRB exercise in the case study cities. The third chapter consists of literature review which provides a theoretical overview of the major GRB approaches and tools, as well as lays down rationale for the approach adopted in this study and gives a detailed theoretical background for it. The fourth chapter briefly discusses the urban governance structure prevailing in the

country and provides an analysis of major national urban development policies and city-specific policies from gender lens. The subsequent chapter is based on the GRB exercise conducted for the two case study cities – Bhopal and Pune and includes the city profiles, sectoral analysis of the ULB/ parastatal agencies' (involved) budget and performance assessment of basic services from gender lens. The sixth chapter presents the key findings from the two analytical tools applied in this study – exercise on prioritization of services and BIA of the budgetary expenditures/ allocations of each sub-sector. It also includes a comparative analysis of the sub-sectors across the two case study cities. The concluding chapter ties together the conclusions and recommendations drawn from this study.

2. Methodology

2.1. Introduction

Gender responsive budgeting can be conducted in a variety of ways. It can be done by the government in-house or through an external agency; examine various sectors; at different levels of government (central/ state/ city), ministries or departments, cover various programmes; part(s) or entire budgets; or follow different budget classifications. The gender budgeting handbook, as published by the Ministry of Women and Child Development (MWCD), GoI, suggests urban specific sectors like housing, livelihoods, sanitation, water, electricity, fuel, healthcare, maternity services or crèches, public toilets, transport and street lightning as some of the critical areas of focus while conducting such an exercise. Besides these, sectors like public space and recreation facilities, environmental planning, food systems and economic and workforce development etc., could also be further encompassed in a GRB exercise for urban development sector.

2.2. Scope of the Study

This study intends to undertake GRB of the urban development sector. Given the structure of this sector, this study has been done focusing on the lowest unit, i.e. city level, for analysis throughout. It needs be mentioned at the onset that urban development sector consists of a diversity of institutions – departments of any ULB, state or central government or parastatal agencies - that provide services and implements programmes and schemes. Programmes and schemes in the urban areas are not implemented by line departments as in case of the rural areas but are executed by a combination of line departments and ULBs that may operate using their own revenue sources. Hence, any GRB exercise has to look at policy statements and departmental budgets of state departments as well as that of the ULB. It is also possible that both, the state government's concerned department and the ULB, make expenditures on same sector. Thus, this GRB exercise will comprise of a gender-based analysis of the policies and programmes specific to a particular sector at the national as well as the state level. However, analysis of budgetary allocations for the four selected sub-sectors of urban development will focus at the ULB level.

2.3. Identification of Four Sub-sectors

The field of urban development consists of various sub-sectors as discussed above. This study would primarily focus on four basic services - water, sanitation, housing and public transportation. These are specifically relevant within an urban context as they mediate living conditions and thus have direct bearing on women's well-being. Also, given that function of ULBs largely remains restricted to these four and the limited scope of this study, our analysis is restricted to these four urban services.

2.4. Theoretical Framework Adopted

In order to conduct a gendered budget analysis, multiple theoretical frameworks and tools were considered such as the three-way categorization, as given by Rhonda Sharp, or the model followed in South Africa (See Chapter 3 for details). However, given the structure of urban development in India as well as the scope of this study, it was felt that these frameworks would be inadequate or are too broad for our purpose. Also, in case of selected sub-sectors, women's needs are not explicitly visible. For instance, in case of provision of water or sanitation, it is easy to mistake that benefits derived from these services would be equal for both - men and women. The recognition that men and women have different positions within households, hence have different control over resources and different needs, thus form the basis for further analysis specific to this particular sector. It was felt that this very fundamental aspect of gender relations was not being captured in the given frameworks.

The tool developed by us has been adopted on the basis of work of Caroline Moser on Gender Planning in third world countries. She highlights the triple role of women and taking from Molyneaux (1985) classifies women's needs as 'Strategic Gender Needs' or 'Practical Gender Needs' (Moser 1989 and 1993). Our study is also shaped by the premise of transformatory nature of concepts of practical and strategic needs, as specific to a given situation. Hence, the first step we propose is to explore the gender needs in the four selected sub-sectors: water, sanitation, housing and transportation, specific to the urban environment. The list of needs emerge from use of services and infrastructure that relate to women's personal safety, economic security, security of tenure and control of assets and overall well-being to begin with.

2.5. Components of GRB of Urban Development Sector

Gender sensitive analysis of Urban Development sector in this study has been undertaken in following phases:

Phase 1 – Deciding on a suitable GRB framework. For our work, we have used the 'Gender Needs' framework.

Phase 2 – A city profile giving the required city background, its development trajectory and current levels of infrastructure provisions and shortages therein was prepared for both case study cities. The city background included information on population, population growth rate, density, sex ratio, employment situation, land use and urban poverty pockets. The status of four selected sub-sectors essential for undertaking GRB of urban sector are - water supply, sanitation, public housing and public transportation are also mentioned. The city profile also included a snapshot of the city budget in the format as shown in Table 2.1.

Table 2.1: Snapshot of ULB budget

	Total (lakhs/ crores)				Per capita[2]			
	Actual (2013-14)	Financial Allocation (2014-15)	Revised Allocation (2014-15)	Financial Allocation (2015-16)	Actual Expenditure (2013-14)	Financial Allocation (2014-15)	Revised Allocation (2014-15)	Financial Allocation (2015-16)
Total revenue income								
Total capital income								
Total budget size								
Total revenue expenditure								
Total capital expenditure								
Total expenditure								
Surplus/ deficit								

Source: Prepared by the authors.

Phase 3 – Preparing a table that gives details of programmes/ schemes in each of the selected sub-sector and its implementing agency and/ or agency that is allocating funds. Allocations of national level schemes/ programmes are included in the ULB budgets. The national level allocations may not be entirely used by the ULB often due to its limited capacity to implement programmes/ schemes. However, it is better to take the amounts allocated from city budgets itself, if the programme/ scheme is implemented by the ULB or from the budget of the respective parastatal or state government department implementing them, as has been done in this study.

Table 2.2: Budgetary Allocations across the four selected sub-sectors

Sub-sector	Programmes & Schemes	Allocating/ Implementing Agency	Actual Expenditure (2013-14)	Financial Allocation (2014-15)	Revised Allocation (2014-15)	Financial Allocation (2015-16)
Water Supply						
Sanitation						
Solid Waste Management						
Sewage						
Storm Water Drainage						
Housing						
Public Housing						
Transport						
Footpaths & Roads						
Buses/ BRTS						
Metro (if present)						

Note: BRTS = Bus Rapid Transit System.
Source: Prepared by the authors.

The data for financial allocations (for 2014-15 and 2015-16), revised estimates (for 2014-15) and actual expenditure (for 2013-14) used for analysis of each sub-sector was collated in the format as shown in Table 2.2. Data for three years has been used given that capital expenditure is spent in phases and can only be accurately captured

[2] Throughout this study, per capita for each year has been calculated by applying previous decade's population average exponential growth rate to the population of the year.

over a period of few years. Actual expenditures are available for only a period of two-years back, while the revised estimates are available for only last year in a budget proposal document. The way budget data are kept can differ widely among cities, and have influenced the method of analysis. Expenditures/ allocations have been used to arrive at per capita estimates for each sub-sector.

Phase 4 – In order to conduct a gendered analysis of urban development, a list with women's needs in each sub-sector, indicators to assess whether the need is met or not and parameters for the indicator was prepared. This was done based on data collected from the ground through either exhaustive surveys or other platforms of public participation, given that city specific contexts differ. Table 2.3 to Table 2.6 below, gives indicators of women's needs formulated for the purpose of this study. These indicators and parameters have been drawn from the literature review in the following chapter (See Section 3.5 of Chapter 3 for detailed analysis). These indicators and parameters have been used for performance assessment of each of the sub-sector, and resulting data analysed from a gender lens. The selection of the indicators and parameters are primarily based on the Service Level Benchmarks (SLBs) of Ministry of Urban Development (MoUD 2012), which are acceptable all over the country. Any further analysis can expand and include many other indicators, parameters and sub-sectors as applicable.

Table 2.3: Indicators of Women's needs: Water supply

Sub-sector	Indicator	Parameters
Water Supply	Coverage of piped water supply	% HH having piped water
	Service timing	Duration (# hrs/ mins)
	Quality	Potable (y/ n)
		If non-potable, why?
	Pressure	Low/ High
	Pricing	Subsidies to women-headed HH

Source: Prepared by the authors.

Table 2.4: Indicators of Women's needs: Sanitation

Sub-sector	Indicator	Parameter
Solid Waste Management (SWM)	Door-to-door collection	Availability of door-to-door collection (y/ n)
		% HH coverage of door-to-door collection
		Frequency of collection
	Community collection	Availability of public disposal bin/collection site (y/ n)
		Frequency of collection
Sewage	Household toilets	% HH with toilets
		Connection of toilets to sewer lines (%)
		Sewer lines covered (y/ n)
	Community toilets	Presence of community toilets (y/ n)
		Maintenance of community toilets (y/ n)
		Safety of community toilets
	Open defecation	Open defecation (y/ n)
Storm Water Drainage	Coverage	Coverage of storm water drainage (y/ n)

Source: Prepared by the authors.

Table 2.5: Indicators of Women's needs: Housing

Sub-sector	Indicator	Parameter
Slum/ Informal Settlements	Security of land tenure	Ownership of land (government/ private/ other)
	Provision of basic services	% HH having provision of basic services
	Upgrading	Slum upgrading schemes (y/ n)
Public Housing	Provision of public housing	Subsidies in beneficiary contributions for women-headed HH (y/ n)
		Quality of construction (satisfaction level of female residents)
		Availability of infrastructure facilities (community hall/ temple/ mosque, open spaces, street lighting, childcare/ creche)
Women-specific housing	Working women hostel	Availability of beds (%)
	Homeless shelters	Availability of beds for women (%)

Source: Prepared by the authors.

Table 2.6: Indicators of Women's needs: Transportation

Sub-sector	Indicator	Parameters
Footpaths & Roads	Walkable footpaths	1.5 m width
	Street lighting	Presence of street lights (y/ n)
	Traffic signals	Signalization (y/ n)
		Zebra crossing (y/ n)
	Foot-over bridges	Presence (overhead or underground) (y/ n)
		Presence of functioning lighting (y/ n)
Buses/ BRTS/ Metro	Bus stand	Presence of bus shelter (covered/ uncovered) (y/ n)
		Presence of lighting at bus shelter (y/ n)
		Presence of display systems/ maps/ signage (y/ n)
	Buses	Presence of organized public transport in urban area (%) (SLBs for Urban Transport)
		Number of buses per 1000 population
		Seats gender segregated (y/ n)
		Availability of travel subsidies for women (y/ n)
		Presence of operational interior lights on board bus (y/ n)
		Number of female harassment cases registered
	Gender sensitivity among driver- conductor	Presence of training programmes (y/ n)
		Grievance redressal facility (y/ n)
	Usage	Passenger count (% women passengers)

Source: Prepared by the authors.

Phase 5 – Assessment of the existing levels of infrastructure according to indicators listed in Table 2.3 to Table 2.6 against the performance benchmark set by the MoUD for Water and Sanitation[3] and Transport.[4] Many cities have not yet achieved full coverage of these four services. In particular, there is severe housing shortage and hence a significant proportion of households tend to live in slums alongside shortages in infrastructure. If the city does not have adequate coverage of these services then even women will not benefit. *Question is that if the coverage of services is low, will*

[3] See MoUD (nd). *Handbook of Service Level Benchmarking*, Ministry of Urban Development, New Delhi, www.wsp.org/UserFiles/file/service_benchmarking_india.pdf, Accessed on September 16, 2015.

[4] See MoUD (nd). *Service Level Benchmarks for Urban Transport at a Glance*, Ministry of Urban Development, New Delhi, moud.gov.in/upload/uploadfiles/files/Service_level.pdf, Accessed on September 16, 2015.

women be at more disadvantage than men as compared to a situation wherein there is universal coverage.[5]

Phase 6 - Since investments made by the city government/ parastatal agencies do not directly translate into the benefits men and women receive, assessment of various services in each of these sub-sectors from the perspective of women is necessary. In order to assess these selected indicators and parameters (based on the above mentioned tables); the following methods have been adopted:

1. Secondary data collection: This includes available literature/ studies highlighting the status of the selected sub-sectors in form of reports, Detailed Project Reports (DPRs), census reports, City Development Plans (CDPs), City Sanitation Plans (CSPs), etc., published by local organizations/ agencies, non-governmental organizations (NGOs), research institution, etc.
2. Primary data collection: For the selected indicators and parameters wherein information is unavailable through secondary data sources, appropriate primary data collection tools have been applied. These include:
    - Focus Group Discussions (FGDs)/ Rapid assessment at settlement-level: Since the coverage of/ access to services is found to be minimal in the low-income households in comparison to the middle/ high income groups, FGDs/ rapid assessment in settlements were conducted primarily in settlements of low-income group, i.e. slums. The selection of slum settlements was based on combination of both purposive and stratified random sampling in order to ensure that settlements spread geographically across the city were covered. Around 2.5 - 3 per cent of slum settlements in each city have been covered as sample size for conducting FGDs at settlement-level with both men and women. In order to get a representative sample, factors such as location of settlements (peripheral/ ecologically weaker areas/ in middle of the city), ownership of land on which the settlement (government/ private/ trust, etc.), community residing (marginalized groups such as rag-pickers/ *adivasis* etc.) and many others were included during the selection of settlements. The status of selected indicators and parameters at settlement-level were collated from FGDs and rapid assessments for water supply, sanitation and public housing sub-sectors.
    - Gender traffic counts: This primarily enabled us to understand gender differentiation of users using public transportation. Gender counts were conducted at (i) major cross junctions of the city; and (ii) bus stands wherein high ridership was recorded by the public transport agency. For example, in Bhopal city, which has an open Bus Rapid Transit System (BRTS) in place, selection of the bus stands wherein high ridership is observed by Bhopal City Link Limited (BCLL) were selected for conducting gender counts. This was

[5] It was possible to assess this given that out of the two cities of this research, Pune has better service coverage as compared to Bhopal (See Section 6.3 in Chapter 6).

also supplemented by the observations of the team conducting these counts regarding other infrastructure such as bus shelters, footpaths, streetlights, etc.

In this study we have used FGDs to obtain data on water, sanitation and public housing and gender traffic counts for assessment of public transportation. The performance assessment methods would vary across the sub-sectors based on the identified indicators and parameters (See Table 2.7 to Table 2.10 for details across the selected four sub-sectors).

Table 2.7: Performance Assessment of Water Supply

Sub-sector	Indicator	Parameters	Performance Assessment Method	Comments
Water Supply	Coverage of piped water supply	% HH having piped water	Secondary data – DPRs/ SLB report of MoUD	
	Service timing	Duration (in hrs/ mins)	FGD/ Rapid assessment at settlement-level	
	Quality	Potable (y/ n)	Secondary data - SLB report of MoUD	
		If non-potable, why?	FGD/ Rapid assessment at settlement-level	
	Pressure	Low/High	Secondary data - SLB report of MoUD	
	Pricing	Subsidies to women-headed HH	Secondary data – BMC reports & FGD at settlement-level	

Source: Prepared by the authors.

Table 2.8: Performance Assessment of Sanitation

Sub-sector	Indicator	Parameter	Performance Assessment Method	Comments
SWM	Door-to-door collection	Availability of door-to-door collection (y/ n)	FGD/ Rapid assessment at settlement-level	
		% HH coverage of door-to-door collection	Secondary data – DPRs/ SLB report of MoUD	
		Frequency of collection	FGD/ Rapid assessment at settlement-level	
	Community collection	Availability of public disposal bin/collection site (settlement level, y/ n)	Secondary data (DPRs) and FGD/ Rapid assessment at settlement-level	
		Frequency of collection		
Sewage	Household toilets	% HH with toilets	Secondary data - SLB report of MoUD	
		Connection of toilets to sewer lines (%)	FGD/ Rapid assessment at settlement-level	
		Sewer lines covered (y/ n)	FGD/ Rapid assessment at settlement-level	
	Community toilets	Presence of community toilets (y/ n)	FGD/ Rapid assessment at settlement-level	
		Maintenance of community toilets (y/ n)		

		Safety of community toilets		
	Open defecation	Open defecation (y/ n)	FGD/ Rapid assessment at settlement-level	
Storm Water Drainage	Coverage	Coverage of storm water drainage (y/ n)	Secondary data - SLB report of MoUD/ DPRs	

Source: Prepared by the authors.

Table 2.9: Performance Assessment of Housing

Sub-sector	Indicator	Parameter	Performance Assessment Method	Comments
Slum/Informal Settlements	Security of land tenure	Ownership of land (government/ private/ other)	FGD/ Rapid assessment at settlement-level	
	Provision of basic services	% HH having provision of basic services		
	Upgrading	Slum upgrading schemes (y/ n)		
Public Housing	Provision of public housing	Subsidies in beneficiary contributions for women-headed HH (y/ n)	Secondary data – from BMC	
		Quality of construction (satisfaction level of female residents)	FGD/ Rapid assessment at settlement-level	
		Availability of infrastructure facilities (community hall/ temple/ mosque, open spaces, street lighting, childcare/ creche)		
Women-specific housing	Working women hostel	Availability of beds (%)		
	Homeless shelters	Availability of beds for women (%)		

Source: Prepared by the authors.

Table 2.10: Performance Assessment of Transportation

Sub-sector	Indicator	Parameters	Performance Assessment Method	Comments
Footpaths & Roads	Walkable footpaths	1.5 m width	Rapid assessment/ Observation	
	Street lighting	Presence of street lights (y/ n)		
	Traffic signals	Signalization (y/ n)		
		Zebra crossing (y/ n)		
	Foot-over bridges	Presence (overhead or underground) (y/n)	Secondary data (research reports) and Rapid assessment/ Observation	
		Presence of functioning lighting (y/n)	Rapid assessment/ Observation	
Buses/BRTS/ Metro	Bus stand	Presence of bus shelter (covered/ uncovered) (y/ n)	Rapid assessment/ Observation	
		Presence of lighting at bus shelter (y/ n)		
		Presence of display		

		systems/maps/signage (y/ n)		
	Buses	Presence of organized public transport in urban area (%) (SLBs for Urban Transport)	Secondary data (research reports)	
		Number of buses per 1000 population		
		Seats gender segregated (y/ n)	Rapid assessment/ Observation	
		Availability of travel subsidies for women (y/n)	Secondary data (from BCLL) or FGD at settlement-level	
		Presence of operational interior lights on board bus (y/n)	Rapid assessment/ Observation	
	Gender sensitivity among driver-conductor	Presence of training programmes (y/ n)	Information with concerned department	
		Grievance redressal facility (y/ n)	Settlement-level FGD and Rapid assessments/ Observations and secondary data	
	Usage	Passenger count (% women passengers)	Gender passenger counts at BRTS junctions or bus stands	

Source: Prepared by the authors.

Data for performance assessment was used to capture access to basic services at the settlement level for water and sanitation; this study focuses on low-income settlements. Performance assessment as against status of basic services, yields more details regarding gendered needs (as identified in the above tables) and are not limited to specific MoUD benchmarks. Since, the sample taken in this exercise is representative; the analysis in this study doesn't draw on a direct comparison of results from the two.

Phase 7 - This has been followed with prioritization of the sub-sectors/ services. Under this, an exercise of ranking of services in terms of its priority to both men and women was undertaken. Groups of men and women were asked to state, in the order of priority, the lack of which basic service do they prioritize the most to the least. This analysis would assist any ULB/ parastatal agency/ State government in preparing a gender-sensitive budget that would meet women's prioritized needs. This can also be used for public policy making purpose in order to decide budgetary allocations across sectors or planning infrastructural facilities in the city.

Phase 8 – The last analytical tool used is Benefit Incidence Analysis (BIA), done for each of these sub-sectors, i.e. computing the extent to which women are benefitting from the expenditures/ allocations made city government/ parastatal agencies in each of these sub-sectors. Based on (i) per capita expenditure (as computed in Phase 3 for each sub-sector); (ii) satisfaction level of the service to women (through FGDs conducted); the extent of benefits accruing to women have been calculated for each sub-sector.

The formula is:

Per capita expenditure reaching women = **PCE** x **S**

Where,

PCE = Per capita expenditure/ allocation (calculated in Phase 3 for each sub-sector)

S = Satisfaction level of service to women

In this study, satisfaction level has been employed as a tool to measure the extent of benefit reaching women. Satisfaction level is required to be computed using data from household surveys, however due to the limited scope of this research, the required data has been collected through FGDs. Groups of men and women, were asked to rate their levels of satisfaction on a scale of one to five, depending on the quantity and quality of service received, with one being the least satisfied and five most satisfied. There were translated into percentages wherein rank of one meant 20 per cent satisfaction, rank two meant 40 per cent satisfaction and so on. Thus, extent of expenditures/ allocations incurred/ made by city government/ parastatal agencies in each of these sub-sectors are specifically reaching to women were assessed.

2.6. Limitation of the Study

As with any application of theoretical models, there are several important limitations to applying GRB methods and tools to the urban development sector as a means to promote gender equity. While every effort was made in research design to reduce the severity of these limitations, they bear mentioning. The limitations include the following:

- **Level of Analysis**: A GRB analysis exercise can be conducted for urban development sector at any tier of the government (national, state or city-level), taking into account the involvement of multiple parastatal agencies/ Special Purpose Vehicle (SPV). The case studies considered in this report were conducted at the ULB level taking into account the parastatal agencies involved in the respective cities.
- **Expenditure-side Analysis**: The GRB analysis conducted herein considers solely the expenditure-side of city government budgets. This is a typical application of GRB exercises, as budgetary allocations are a salient method of measuring the implementation of gender priorities in government policies and programmes. An expenditure-side analysis also provides a better opportunity to measure performance of such budgetary allocations, as this data is more readily available. However, a revenue-side analysis may allow for additional insight relating to gender issues. Government revenue in the urban development sector, for example, fees collected for household water tap connection, also has gender-based impacts. If resources and time allow, it may be beneficial for the undertaking office to conduct a GRB analysis on both government expenditures and revenues.

- **Selection of Sub-sectors within Urban Development:** For the purpose of the case studies conducted in this report, four sub-sectors within urban development were selected: water, sanitation, housing and public transportation. There are certainly other sectors within the purview of urban development which would benefit from a GRB analysis as well, including but not limited to: public space and recreation facilities, environmental planning, food systems and economic and workforce development.
- **Identification of Gender Needs and Parameters:** The gender needs and parameters identified in this report have been selected on the basis of literature on gender and urban development, as well as availability of municipal data for the two case study cities. These were selected based on availability of objectively quantifiable data. Other parameters that could be measured through subjective observations were excluded from analysis, since the relative subjectivity would vary among users. A more exhaustive list may be complied by any undertaking office in GRB implementation. Pilot studies and community outreach may also be utilized to identify a complete list of relevant parameters, particularly as they might apply to different groups of women within the study area. Due to the nature of this project, it was not possible to conduct exhaustive community outreach in order to understand the most pertinent needs for each city's populations, particularly across different income groups, occupations, and communities.
- **Selection of Assessment Tools:** Based on the time frame of the study, selection of assessment tools to measure performance of identified parameters may vary. The main assessment tools which could be applicable herein: a detailed questionnaire submitted to a representative stratified random sample based on the population size of the chosen city/ state (most time intensive), or beneficiary incidence analysis (more time intensive), or a settlement-wise rapid assessment of parameter performance, supplemented with secondary data (least time intensive). The former set of tools would provide the most comprehensive analysis and provide a stronger understanding of how the most vulnerable populations benefit from the ongoing programmes and schemes, with the limitation that it is time and resource intensive. If time and resources are more limited, the choice to utilize the latter set of tools may be exercised, which has the disadvantage of providing a more limited understanding of parameter performance. The latter set of tools has been utilized in the case studies undertaken in this report.

3. Literature Review

3.1. Introduction

As a result of differences in gender roles and needs, urban development policies have radically different impacts on women and men. This effect is true across nearly every sector of government expenditure, but has particular significance in the context of the most basic of urban provisions that includes water, sanitation, housing and transportation. Urban development and the provision of these basic services lack an awareness of gender differences, particularly when there is change in the recent years in the way these services are proposed to be financed.

Since its emergence in the early 1970s, the field of gender and development has produced a variety of theoretical perspectives, the evolution of which has benefitted from global perspective shifts in feminist studies and theories of development. The literature reflects a variety of interpretations of gender and development, unified by the conviction that gender inequality is detrimental to urban equity goals. To address this inequality, gender planning and mainstreaming objective is defined as "the emancipation of women from their subordination, and their achievement of equality, equity and empowerment" (Moser 1993: 1). Gender mainstreaming encompasses GRB, an institutional tool that builds on this theoretical methodology to more equitably distribute resources in government budgets and programmes.

This chapter provides a brief roadmap of this evolving discourse on gender equity in development and how the increasing prevalence of GRB fits into this narrative. This summary describes key concepts, ideological positions, approaches and gender analysis frameworks from scholars in the field of gender and development. Following this summary, the chapter describes how GRB fits into this framework as a tool to bring about greater gender equity in urban development in India. Finally, the chapter concludes with an exploration of how these theories apply to urban development in India in the fields of water, sanitation, housing and transportation.

3.2. Core Concepts

A. Gender and Intersecting Identities

But what is gender, exactly? While in the context of this report the terms *gender* and *women* may be used interchangeably, they have different meanings. Typically, the term *women* is a social grouping which refers to those who identify as female. While this group is predominantly the focus of gender-inclusive development and planning initiatives, the use of the term *women* implies that their needs are framed based on a biological differentiation between femaleness and maleness. To avoid this error, scholars have preferred to adopt the term *gender*, which refers to "culturally-mediated expectations and roles associated with masculinity and femininity" (Lips 2015: 2). This term is a social category, which incorporates an assumption that conditions and needs vary between women and men not due to any biological difference, but rather due to socially constructed conditions and behaviours which place different gender

roles on members of each group. Importantly, an understanding of gender requires an understanding of the social and cultural relationships between men and women.

Gender roles are shaped by economic, cultural and social norms and hence women's needs are not homogenous. While gender roles play a significant part in constructing unequal urban realities for women, their needs are also shaped by other facets of their identity. This concept is called *intersectionality*, a frame of reference which seeks to acknowledge that the multidimensional elements of social life such as class, caste, religion, ethnicity, age, sexual orientation and physical (dis)ability are "intersecting, mutually modifying and inseparable" (Evans and Williams 2015: 131). Individual factors of identity such as gender cannot be considered in isolation. As such, "gender concerns need to reflect the rights and needs of women not only as 'women' but as representatives of diverse constituencies including informal sector workers, domestic workers, care givers, evicted people, homeless, migrants, etc." (UN Women 2012: 13). Tendencies to universalize women's needs should thus be mediated through comprehensive, inclusive outreach to better understand how these identities might inform urban development goals.

B. Why a Gender Perspective of Urban Development?

Put simply, urban development in India is in need of a gender perspective because "women and men experience cities in different ways" (Beall 1996: 10). Women's interests and needs have been underrepresented in urban policy and development, largely due to a gender-blind approach, conventionally used in India, that is overwhelmingly infrastructure and real estate oriented (Mahadevia 2011a). In order to promote sustainable and equitable urban development, it is critical to integrate women's needs in the design of programmes, infrastructure and services.

Gender roles contribute to differentiation among household members. Performing household-based evaluations of urban development is inadequate, in part because of gender-based differences in roles and existing gender disparities. The nature of women's participation in the labour market and their domestic tasks means that they have very different time and spatial constraints than men. For example, among women who act as the primary collectors of fuel and water for their home, the lack of basic services bears a much larger impact on them than their male counterparts who do not share such responsibilities. As such, female and male needs and priorities for basic services such as urban housing, water, sanitation and transport tend to be quite different (World Bank 2010).

Urban poverty is an unfortunate consequence of urbanization, with adverse impact on women and girls. Women comprise a majority of urban people in poverty and as such have inferior access to resources, livelihood and basic services and face higher risk of crime, epidemics, natural disasters and environmental hazards. Women living in cities often face the greatest challenges, not only because they are, "on average poorer than men…but also often because they experience greater difficulty in accessing resources

and services tailored to their needs, and decision-making opportunities" (UN DESA, UNDP and OHCHR 2015: 3). Studies of transport, housing, infrastructure access, etc., as we show later, demonstrate these inequalities, which is now a growing trend. As Beall explains, "The increase in women-headed households in cities everywhere and the growing phenomenon of women-maintained families, make it even more necessary to adopt a gender perspective in responses to urban poverty" (Beall 1996: 10).

Finally, urban development, if conducted from a gender-aware standpoint, has the potential to promote women's opportunities, improve livelihoods and accomplish greater gender equity. In many cases, women are not adequately represented in local government, with the consequence that their priorities are rarely fully understood or taken into account in urban policy and development (World Bank 2010). In India, although 33 per cent reservations for women in the local governments is in practice since the 74th Constitutional Amendment Act (CAA), there is a long way for these women in the local government to prioritise expenditures that benefit women.

One sector, where there is very little attention paid by the policymakers in the cities is transport. Women do not have equitable access to transport and hence have low mobility. Hanson (2010) states that mobility shapes gender because mobility provides opportunities and also influences social justice through enhancing capabilities (Beyazit 2011). Harvey (1973), states that transport facilities were essential for reaching out to other services and more importantly, the job market. Transport provides mobility, which by itself is freedom, it provides choice and by that, increases capabilities as defined by Sen (1985), who also says that the enhancement of capabilities is important for social justice.

Gender planning and tools such as GRB integrate these priorities into the urban development agenda, lay policy priorities, develop programmes, decide budget allocation priorities and create institutional mechanisms to ensure appropriate expenditures thereby providing significant opportunities for women's empowerment. As urbanization continues to escalate globally, as well as in India, there is a significant opportunity to incorporate women's priorities into a sustainable development agenda. When these priorities are taken into account, potential benefits of urban development will affect women and men equitably, leading to increased liveability in cities overall.

Before moving further, it is essential to understand the various concepts relating to gender and gender needs in urban development based on the concepts of Caroline Moser, Maxine Molyneaux, Kate Young. These have been discussed below briefly.

C. Triple Role of Women

The triple role of women is a central element, which underpins theories of gender and development. Thus, to understand women's needs in urban development, it is

essential to first understand the 'Triple Role of Women', which can also be understood as a gendered division of labour (Moser 1993). Women are unique from men in that they typically perform three separate but equally essential roles, between which they must divide their time. The first of these triple roles is *reproductive work*, which includes tasks such as childbearing and rearing, as well as household tasks and responsibilities. Women also conduct *productive work*. Whether inside the home or out, many women conduct work and contribute secondary income to their households. Finally, many women are also engaged in *community management work*, which entails provision of items of collective consumption. This work oftentimes occurs in rural and urban communities alike. Urban conditions, which make the completion of any one of these roles more difficult limits the amount of time they may dedicate to their other two roles, yet this is not typically taken into account in mainstream planning and policies. Urban development must be conducted with these needs and priorities in mind.

D. Practical and Strategic Gender Needs

A second key concept central to the evolution of gender and development theories is Maxine Molyneaux's 'Practical and Strategic gender needs' framework. To conduct effective gender budgeting for urban development, it is important to recognize that women's needs may be practical or strategic (Molyneaux 1985). Practical gender needs address immediate concerns and necessities. As their name suggests, they are practical in nature and aim to improve inadequacies in living and working conditions for women. Strategic gender needs, on the other hand, address systematic and structural conditions that contribute to women's subordinate position in society. Programmes that respond to these needs address issues such as gender divisions of labour, control of assets and equal wages, ultimately empowering women to achieve greater equality.

During gender budgeting, it is important not to rely on the practical/ strategic gender needs framework as a blueprint for determining which issues will be reflected in the budgeting exercises. By overly mechanizing this distinction, it loses its value as an analytical tool. Practical needs, when considered routinely, may be framed as "a women-focused set of basic needs" (Young 1997: 369). Tendencies to list out these basic practical needs *a priori* – that is, without consultation and full participation of women in the community – should be avoided. Participants in the gender budgeting process should also take care to avoid discarding strategic needs as pure feminist concerns, or "irrelevancies to planners and development practitioners" (Young 1997: 369). To avoid these tendencies and to preserve the integrity of women's participation in needs identification, a third concept of gender needs is needed.

E. Transformatory Potential of Gender Needs

Within urban development, many gender needs cannot be so clearly divided between strategic and practical. Oftentimes, the line between the two may not be explicit. Other times, what is initially a practical need may evolve over time to address a

strategic need as well. This is described by Kate Young as the transformatory potential of gender needs (Young 1997). This third analytical tool acknowledges the dynamic nature of women's needs and urban development. Key to understanding how practical needs may offer transformatory potential is the use of outreach and prioritization exercises with women in a particular community. Young explains: "The idea here is to allow the interrogation of practical needs (by women themselves) to see how they can become or be transformed into strategic concerns. In other words have they the capacity or potential for questioning, undermining or transforming gender relations and the structures of subordination?" (Young 1997: 370). By considering the power of transformatory gender needs, the needs framework is able to accommodate priorities shaped by intersecting facets of women's identities.

As such, it becomes apparent that urban development programmes that undertake the process of identifying practical, strategic and transformative gender needs cannot proceed without women's participation. According to Young (1997), decision-making processes must be restructured to allow for widespread consultation and participation regarding urban development goals. In this way, the inclusion of women serves an additional strategic need: that of increasing women's active engagement and participation in the decision-making processes which affect their communities, environments and well-beings. Women's empowerment is essential for collective empowerment, which Young argues is necessary for urban development to be an effective agent of economic growth and social betterment.

3.3. Theories of Gender and Urban Development

Prior to the 1970s, research and theories related to urban development were largely 'gender-blind', assuming that the experiences of men were the norm (Moser and Peake 1994). The emergence of gender development theories have provided the conceptual framework for integrating gender into urban planning by acknowledging that women and men have different needs. In the 1970s, the first theories incorporating a gender perspective in development emerged. Since then, the field of gender and development has undergone several conceptual shifts, which have occurred parallel to progressions in gender theories and urban development theories. The major arc of these transitions developed from a welfare view of gender and development, to an approach focused on women's empowerment.

A. Women in Development (WID)

The first major theory of gender planning to emerge was the Women in Development (WID) approach. The term was first adopted by the United States Agency for International Development (USAID) to describe a theoretical framework that viewed women as valuable resources that can provide economic contributions to development. WID is linked with modernization theory, which challenged 'trickle-down' theories of development and argued that modernization had unequal impacts on women and men.

An influential force on WID was the newly emerging body of research on women in developing countries which began to challenge assumptions of the 'welfare approach' to development. Danish economist, Ester Boserup's *Women's Role in Economic Development* (1970), which highlighted the role in the agricultural economy of Sub-Saharan Africa, was the first such significant work. Her work directly challenged contemporary development theories, policies and practices which had largely marginalized or ignored women's role as producers (Evans and Williams 2015). Assumptions that a woman's place was in the home had the natural consequence that policies to develop productive efficiency of laborers was focused solely on men. Boserup's work was particularly influential to the WID movement because it provided evidence to support economic efficiency and equity arguments, leading to the incorporation of women in these policies.

A second influential force on the formation and eventual prominence of WID was the 1975-1985 United Nations (UN) Decade for Women. The UN Decade brought considerable international attention to the need for and legitimacy of women's studies as a discipline. Resource allocation for studies related to WID increased, leading to an increase in research on the subject. The UN Decade also had the effect of helping to shift the focus of discourse on women and development. During this time, research coalition Development Alternatives with Women for a New Era (DAWN) played a crucial role in shifting research agendas within women and development to prioritize a 'bottom-up approach' to understanding women's needs and interests in developing countries (Moser and Peake 1994).

By placing an emphasis on the productive roles of women, the main focus of the WID movement was better integration of women into economic systems. The movement viewed women's subordination according to an economic framework: the origin of women's subordination was connected to exclusion from the marketplace. As such, WID essentially called for more equitable and efficient economic development as a means to improve both women's status and development conditions. If women's productive roles were better supported and integrated into economic development schemes, greater economic efficiency would arise simply through realizing the productive capacity of half of the population. This would also serve to improve women's status in relation to men, so the movement argued. Because the movement articulated women in development as an economic opportunity rather than merely on equity terms, it was quickly incorporated into international development agendas and became a popular concept among governments and women (Tinker 1997).

Theorists later criticized WID, however, due to its narrow liberal feminist approach. For one, WID did not consider the importance of women's reproductive roles. By failing to recognize the time women spend on their reproductive roles, projects aimed at increasing their productive capacity oftentimes placed unrealistic time and work burdens on women, who were subsequently blamed for project failure. Additionally, WID was criticized for its homogenous view of women, treating 'women' as an

undifferentiated category with universally shared interests. By focusing solely on women's productivity, WID falsely assumes that women's only barrier to empowerment was a lack of access to productive means in the public sphere. WID frameworks fail to consider how unequal gender roles and other sources of power inequalities such as class, race and religion contribute to their subordination. As a result, WID projects had a tendency to instrumentalise women's needs, focusing on how women can aid development rather than how development should improve women's lives.

B. Women and Development (WAD)

The Women and Development (WAD) movement emerged in the latter half of the 1970s in response to some of these critiques. WAD introduced greater differentiation in the WID framework, recognizing that women are already an integral part of the development process, rather than parties which must be ushered in. WAD rejected the modernist theory foundations of WID, instead drawing on dependency theories which consider global structural and socio-economic factors. WAD also marked a shift from the liberal feminist approach used previously, to a more Marxist feminist approach that focused on how global systems of inequality contribute to gender inequality and women's subordination by the capitalist system. Rather than considering individual-based change as WID theorists did, WAD marked a perspective shift to structural issues, considering sexual inequality as just one aspect of the global inequality created by capital systems (Visvanathan et al. 1997: 22). This theoretical stance is best exemplified by WAD theorists' focus on the exploitation of women by multinational corporations.

Despite this differentiation, WAD approaches were limited in large part by their neglect to analyze the impact of gender roles and gender relations within societies. In focusing on global systems of capital exchange and inequality, WAD fails to consider how patriarchy within a country and gender-based household relationships also contribute to the oppression of women (Visvanathan et al. 1997: 22). Crucially, WAD had many of the same shortcomings of WID in that it failed to consider how underlying conditions of class and gender inequality are interrelated with gender needs in development. WAD also failed to integrate an understanding of the reproductive role of women and its impact on their productive capacities.

C. Gender and Development (GAD)

By the 1980s, Gender and Development (GAD) emerged as a significant alternative to WID and WAD. Addressing the failings of the previous two movements, GAD developed a more holistic framework that incorporates an understanding of the triple role of women in gender planning. Rooted in socialist feminism and rejecting dichotomies between the public and private sphere as well as the notion that women must be incorporated in processes of capital accumulation in order to achieve empowerment, GAD questions the very basis of gender roles and seeks redistributive justice. Important to the GAD framework is that it elucidates the power of women to

act as agents of change, rather than merely as passive recipients of development assistance.

An understanding of the gendered distribution of power and resources within households is a crucial component of GAD approaches. Rejecting the neoclassical approach which treats households as undifferentiated units, GAD theorists such as Naila Kabeer (Kabeer 1994) argue that household members have different needs based on inequalities in bargaining power, which is largely tied to their productive earning power. Additionally, GAD considers forms of oppression that transcend the boundary between the public and private spheres, considering how household responsibilities and roles are related to women's other priorities. Particular focus is placed on strengthening women's legal rights, which includes reform of inheritance and land laws.

Because of its focus on private households and gender relations, GAD places significant emphasis on the importance of male responsibility and female empowerment. As such, gender relations, rather than women, are the category of analysis under GAD. However, because GAD rejects the traditional dichotomy between the public and private spheres, GAD scholars view the state as playing a definite role in providing programmes to foster gender equality, as well. As a result, equivalent emphasis is placed on the need for women to organize as agents of their own change, as well as on the need for the state to provide social services to promote women's emancipation (Visvanathan et al. 1997). To successfully upset existing power relations and create greater gender equity, GAD initiatives require women's self-empowerment and political representation, contributions and solidarity from men and holistic integration of gender-analysis frameworks within development policy and programmes. One way to transform the government's role and address the third criterion is through gender mainstreaming.

D. Gender Mainstreaming

While empowerment approaches have emerged in recent years in theories of gender and urban development, this has yet to translate in any meaningful, systematic way into policy and practice. WID strategies remain the norm among development institutions and governments who are addressing gender. To help bring GAD to the forefront of development policies and programmes and better integrate gender equality into development planning, scholars have promoted gender mainstreaming as best practice for governments, NGOs and other development agencies. Gender mainstreaming advocates for "incorporating gender into all aspects of development programming – policy dialogue, legislation, structures and institutions, resource allocations and use, planning, implementation and monitoring" (Khosla 2009: 5). In this way, it remedies tendencies to view gender as a specialist concern in development.

Gender mainstreaming was introduced at the Fourth UN Women's World Conference at Beijing in 1995. A commitment to mainstream a gender perspective into all policies was incorporated in the Beijing Declaration and Platform for Action (UN Women 1995), which was endorsed by all governments and civil society actors participating at the forum. Subsequently, in 1997 the United Nations adopted gender mainstreaming as the approach for any policy and programme within the UN system (Moser 2005). Gender mainstreaming brings an awareness of gender biases and inequalities into areas of public policy which do not overtly relate to gender, such as urban development, transportation, housing, sanitation and water. The goal of gender mainstreaming is to create gender equality by adjusting policies to reflect structural and cultural gender biases. Under gender mainstreaming, any policy or planned action should be designed with consideration of the potential implications they might have on women and men, with the intention that "women and men benefit equally and inequality is not perpetuated" (UN Women, quoted in Evans and Williams 2015: 116).

The ultimate goal of gender mainstreaming is to eliminate systems of gender inequality through deliberate, planned interventions throughout a society. Gender mainstreaming requires that each phase of a project cycle is conducted with consideration of the gender impact. This includes evaluation criteria, which should be formulated with consideration of the identified gender mainstreaming objectives (de Waal 2006). The ultimate outcome of a gender mainstreaming project should be gender equity, not parity. This is also known as substantive equality, because it "moves beyond equality of opportunity by requiring transformational change" (de Waal 2006: 210). Rather than ensuring that women and men benefit equally from a project, outcomes of gender mainstreaming projects should contribute to countering structural causes of gender inequality. Women's empowerment is a key element of this result, requiring that women are meaningfully engaged and politically represented throughout any gender mainstreaming project. Thus, gender mainstreaming does not simply require assessing gender impacts of any planned action, but also the institutionalization of gender concerns within development agencies and institutions as well as gender empowerment through the promotion of women's participation in decision-making processes (Moser 2005).

Gender Responsive Budgeting is one application of gender mainstreaming which is growing increasingly prominent among governments as well as international development agencies.

3.4. Why Gender Responsive Budgeting?

Given the stated inequalities between women and men in urban areas, and the potential for urban development to improve or deteriorate these conditions, the urban development sector is a prime candidate for gender mainstreaming initiatives. GRB is one tool, which can be implemented under the purview of gender mainstreaming. Budgets are practical applications of government priorities. Because budgets are

essentially institutional tools to carry out policies and governmental plans, GRB provides a key opportunity to integrate gender priorities into these plans. GRB enables governments to analyse the differential impact of budget programmes on women and men and adjust these programmes as necessary to rectify this difference.

A. Gender Responsive Budgeting

Since the 1995 Beijing Platform for Action and the Convention on the Elimination of All Forms of Discrimination on Women (CEDAW), many governments have expressed commitment to the gender equality objectives called for under gender mainstreaming (Judd 2002). Despite this commitment, many lack the necessary tools to ensure that objectives outlined in policy statements are reflected in application. GRB provides a mechanism to do this, while ensuring gender accountability in the allocation and distribution of public resources (Elson 2001; Judd 2002). This is possible because GRB initiatives do not produce a separate budget for women. Instead, GRB analyses any form of public expenditure from a gender perspective, using a gender-mainstreaming framework to identify the budget's differential impacts on women and men. This analysis starts with the assumption that any intervention, by the state, or the market or the society would have differential impact on men and women. Hence, public expenditure statements, which are the budgets, too have these differential impacts. In converse, budget allocations to schemes and programmes that benefit women more than men have potential to change the gender inequality. Such an analysis may apply to an entire budget, or focus on a selected area, but is not confined to programmes which specifically apply to women alone. GRB initiatives question what impact each fiscal measure might have on gender equality, whether that impact reduces, increases, or fails to address gender inequality (Elson 2001). Importantly, GRB initiatives need not apply solely to gender. Rather, the exercise can be modified to consider other forms of inequality such as class or ethnicity. This enables GRB to consider intersecting forms of urban inequality, enabling governments to focus, for example, on the most economically disadvantaged women in a community.

Oftentimes, the individual components of a GRB exercise may address primarily practical gender needs, such as women's access to clean drinking water. However, the very process of GRB helps to address other strategic gender needs by affording greater political accountability, representation and participation to women and ultimately helping bridge the gap towards achieving gender equality.

B. GRB Methodology and Tools

There is no single method to conduct a gender-sensitive analysis of budgets. No matter which approach is taken, GRB always includes a detailed gender analysis of at least one dimension of public funds (Elson 2001). Beyond this basic qualification, there are a multitude of considerations that can shape the application of a GRB initiative. For example, GRB initiatives can be organized by location of analysis (national, state, or city-level), budget components (general, women-specific, pro-poor), budget classifications (revenue or expenditure side), stage of budget cycle, etc.

How these initiatives are designed will also take into consideration country-specific or location-specific gender issues and political and fiscal structures. Following is a brief description of three different GRB methodologies.

The first is Rhonda Sharp's three-way categorization of expenditures.

- Ronda Sharp's three-way categorization of expenditures
  1. Women-specific expenditures: This would primarily consist of expenditures incurred by the government departments and authorities exclusively for women such as expenditure incurred for women's health programmes, special education initiatives for girls, employment policy initiatives for women and so on
  2. Equal opportunity expenditure for civil servants: Expenditures incurred by government departments and authorities on their employees such as training for women clerical officers, provision of crèche facilities, parental leave provisions, writing job descriptions reflecting equal employment opportunities, etc.
  3. General expenditure considered in terms of its impact for gender: Here, gender impact of mainstream budget expenditure by government departments and authorities would be assessed and thus include allocations not covered by the above two categories. For example: In an expenditure budget of agriculture, after excluding the above two types of expenditures, an assessment of the recipients of the various agricultural programmes/ schemes would enable us to understand impacts of the latter on women.

While this method has been proved useful while working with government officials, it has certain shortcomings. It tends to confuse between women and gender. While certain expenditures are targeted at women, it is not necessary that the same may be gender-sensitive. Secondly, this method is proven to be applicable on expenditure side more popularly in comparison to revenue (Budlender et al. 2002).

- South African Model (five-step approach)
  1. Analysing the situation of women, men, boys and girls.
  2. Assessing the gender responsiveness of policies
  3. Assessing budgetary allocations
  4. Monitoring spending and service delivery
  5. Assessing outcomes

This framework forms the basis of policy appraisal, one of the six tools given by Diane Elson (discussed below). The main weakness of this approach lies in the third step as limited data/ unavailability of necessary data is observed in the budget documents. Also, this approach requires assessment of the budgetary allocations from the gender lens and hence has to adopt Rhonda Sharp's approach discussed above. Monitoring of spending and service delivery too is a difficult task, as expenditures made have to be linked to the outcomes in service delivery. The budget document

then has to state the targets to be achieved by the allocated expenditures against which the actual service delivery outcomes can be measured. This is an issue, as the budget documents do not carry any additional information except the income and expenditure statements. Assessing outcomes also require an assessment framework that has to link to the goals and targets for any programme. Again, these are beyond the budget document scope. This five-step framework can be of use when the programme and scheme statements are clearly prepared along with the expected outcomes to assess or measure the outcomes.

- Diane Elson's framework
  1. Gender aware policy appraisal – is the analysis of the policies and programmes funded through the budget from a gender perspective. It asks "in what ways are the policies and their associated resource allocations likely to reduce or increase gender inequality?" (Budlender et al. 2002)
  2. Gender disaggregated beneficiary assessments – exercises can be conducted where actual or potential beneficiaries of public services are asked to assess how far public spending is meeting their needs, as they perceive them (Budlender et al. 2002).
  3. Gender disaggregated public expenditure incidence analysis – "estimates the distribution of budget resources (or changes in resources) among males and females by measuring the unit cost of providing a given service and multiplying that cost by the number of units used by each group" (Budlender et al. 2002). Mahadevia and Brar (2008) have used this concept for estimating public expenditure incidence analysis for slum and non-slum areas in the urban context.
  4. Gender disaggregated tax incidence analysis – examines how much taxation, both direct and indirect, is paid by different individuals or households (UNIFEM 2005).
  5. Gender disaggregated analysis of the impact of the budget on time use - using household time use survey, a calculation of the link between budget allocations and their effect on how household members spend their time is made (Budlender et al. 2002).
  6. Gender aware medium term economic policy framework – "is used to assess the impact of economic policies on women, focusing on aggregate fiscal, monetary and economic policies designed to promote globalization and reduce poverty" (Budlender et al. 2002).
  7. Gender aware budget statement – is the government report that reviews the budget using some of the above tools, summarizes its implications for gender quality with different indicators, such as the share of expenditure targeted to gender equality, the gender balance in the government jobs, contracts or training, or the share of public service expenditure used mainly by women (Budlender et al. 2002).

However during the course of the study we found that these tools do not directly apply to the urban development sector in Indian context due to lack of gender disaggregated data. Thus, we have applied beneficiary assessment and BIA tools, which have been adapted to the programme/ scheme/ expenditure head under scrutiny.

Gender responsive budgeting can cover or be limited to selected departments or programmes, expenditures on new projects, selected forms of revenue, changes in the tax system, implementation of new legislation or gendered analysis of policy documents (Elson 2001). Keeping in mind the scope of this study, our focus will remain on the impacts of budgeted and actual expenditures, as available in the budget documents of the two case study cities for four sub-sectors that we propose to assess from gender lens, namely water supply, sanitation, housing and transport. We have undertaken BIA of these sub-sectors in the two cities to the extent possible and beneficiary assessment of some of the schemes/ programmes/ sub-sector allocations to come up with the figures of benefit accruing to men and women in a particular locality.

C. GRB in Application in India

Gender responsive budgeting initiatives have already been implemented in many countries throughout different regions of the world. There have also been efforts made in India, which pave the way for the GRB for India's urban development sector.

The GoI brings out a GBS every year in the union government budget. Some of the state government budgets as well as the municipal budgets also carry a GBS. The history goes as follows. In 2003, Lahiri et al. (2003) of the National Institute of Public Finance and Policy (NIPFP) constructed an econometric model to link spending on public education and health to the Gender Development Index (GDI), showing the positive effect of such spending on this indicator of gender inequality (Chakraborty 2007). Thereafter the NIPFP developed a methodology of Gender Budgeting (Chakraborty 2005) for the MWCD, GoI. The framework developed was linked to Rhonda Sharp's methodology and it divided the expenditures benefitting women into three categories: (i) women-specific expenditures - defined as schemes where 100 per cent of allocation was meant for women; (ii) pro-women expenditures - defined as those, which incorporate at least 30 per cent of allocation for women or significantly benefit women; and (iii) gender-neutral schemes – meant for all population. This was followed by dividing expenditure heads into four service categories: (i) protective services; (ii) social services; (iii) economic services; and (iv) regulatory services. State-level exercises were carried out using the two categorisations mentioned above while also analysing the budgeted expenditures versus actual expenditures. The MWCD, GoI has prepared a handbook titled *Gender Budgeting Handbook for Government of India Ministries & Department* (MWCD, 2007).[6] The United Nations

[6] MWCD (2007). *Gender Budgeting Handbook for Government of India Ministries & Department*, Ministry of Women and Child Development, New Delhi, accessed on September 10, 2015 from

Development Programme's (UNDP) Human Development Resource Centre too published a series of studies that were sectoral gender budget analysis. But, we do not yet have analysis of the whole urban sector from the gender lens, an exercise that is attempted in this report.

The National Development Council of India adopted the concept of Women's Component Plan (WCP) in the Ninth Five Year Plan (1997-2002) towards women's empowerment of women. The WCP is confined only to the plan expenditure of the government and is thus partial argues Chakraborty (2007: 5), who, in the same breadth argue that WCP was designed to ensure that not less than 30 per cent of the funds and benefits flow to women from the developmental sector. However, the question remains that how to measure the flow of funds to women in each of the developmental sector? That is what we intend to do in this study.

3.5. Gender and Urban Development in India

Based on these theoretical frameworks, gender needs in urban development have been explored as they relate to four sub-sectors: water, sanitation, housing and public transportation. Many of these needs relate to how services and infrastructure are related to women's personal safety and security, economic security, security of tenure and control of assets, the triple role of women and differentiation among household users. Harnessing the theory of the transformative potential of gender needs, it becomes apparent that many of the practical gender needs which may be addressed through GRB exercises in the urban development sector can contribute to addressing larger strategic gender needs and hence towards greater gender equity. Understanding how gender priorities are aligned in each subsector generally helps to reveal potential GRB applications within each category. There is a combined discussion of both, strategic and practical gender needs, given that one transforms into other.

A. Gender and Water

Access to water is undeniably a human right and it plays an integral part in the global agendas of gender equity, environmental sustainability and poverty reduction as articulated by the Millennium Development Goals (MDGs)[7] (Khosla 2003; Mahadevia 2013) and now the Sustainable Development Goals (SDGs). Water affects a range of issues that have serious impacts on quality of life for women, including health. The lack of adequate water infrastructure and services has different implications for women and men and particularly the most vulnerable women and households.

---

http://wcd.nic.in/gb/material/Resource%20Material/GB%20Handbook%20and%20Manual/Hand%20Book.pdf. For further details on the mainstreaming of the initiative in India see http://wcd.nic.in/publication/2001-02/chap11.pdf accessed on September 10, 2015.

[7] The eight MDGs were adopted in 2000 by 189 governments include the following: eradicate extreme poverty and hunger; achieve universal primary education; promote gender equality and empower women; reduce child mortality; improve maternal health; combat HIV/AIDS, malaria and other diseases; ensure environmental sustainability; and develop a global partnership for development.

The triple role of women affects how women access and benefit from water supply infrastructure and services. Services that place an additional time or cost burden on users tend to have a disproportionately adverse effect on women than men. For example, women bear the primary responsibility for gathering water from community taps, when household water supply is not available. This task becomes an incredible time burden for women when the number of taps is inadequate, water supply is irregular, or if water pressure is too low (Khosla 2009). Time spent performing this task creates an additional burden for women, reducing the amount of time and energy they have available to perform their productive roles, enjoy leisure time or pursue their education. It leads to time-poverty among women. Similarly, lack of access to safe water can result in illnesses caused by water-related diseases. Because women tend to be the primary caregivers in the home, they assume much of the burden of caring for children and relatives who fall ill (Khosla 2003). Women may also experience wage loss as a result of poor health or time taken-off to care for ill family members. These are but a few examples of how insufficient infrastructure and services reinforce women's inequality, as they limit female livelihood generation and economic security.

While access to water supply and sanitation is important for all urban residents, for the poor, it becomes a question of survival. For example, access to water at their doorstep increases women's productive working hours; and for the poor women, by 1.5 to 2 hours. This increases their household incomes, an important determinant of whether a family remains above the poverty line or below the poverty line. Data from unpublished studies undertaken by Mahila Housing SEWA Trust (MHT)[8] demonstrates that there is considerable improvement in the health status of the household members after having adequate access to water and sanitation. For example, MHT's study in early 2000 indicates that the incidence of illnesses before provision of water and sanitation was 19 per cent, which reduced to 7 per cent after provision of these services; the percentage of residents taking bath increased from 58 per cent to 100 per cent and the healthcare expenditure reduced by 56.5 per cent. In particular, women reported that they had more time in the mornings to assist their children to prepare for the school and 94 per cent stated enhancement of their social status. Lastly, 90 per cent of the households initiated incremental house up-gradation after the provision of water supply and sanitation (Mahadevia 2013).

B. Gender and Sanitation

Similarly, the triple role of women is reflected in priorities related to sanitation infrastructure and services. Lack or inadequacy of basic sanitation services and infrastructure bears a disproportionate impact on women, particularly with regards to their time and security. For example, a lack of safe and clean toilets has an adverse effect on women's health, physical security and exposure to violence (Khosla 2009).

[8] Data in this paragraph are extracted by the author from the unpublished studies of the MHT.

In absence of sanitation, they have to go out in dark for defecation, increasing risks of sexual violence. They are unable to go out in the daytime for defecation, which also results in adverse health consequences. Further, inadequate sanitation conditions, such as lack of a covered sewerage network and solid waste management, are linked with sickness and disease, placing an additional care-giving burden on female household members. Because women tend to spend greater amounts of time within the home, they are vulnerable to greater health risks caused by unsanitary environments (Khosla 2009).

All participatory surveys involving women indicate that the first demand of poor women is a toilet, in both rural (Chattopadhyay and Duflo 2004) and in urban areas. Open defecation is a matter of great humiliation and shame for the women in particular, who are sometimes physically abused by other residents. Their time is saved in filling water, which they use for productive activities, as studies of Slum Networking Programme (SNP) in Ahmedabad show (Joshi 2002). Water and sanitation policy for the urban poor is the most important gendered policy in the urban context.

C. Gender and Housing

Housing provides multiple benefits to households. Housing security is important for the following reasons (Mahadevia 2011b): (i) it addresses the question of multi-dimensional poverty, ranging from reducing shelter deprivation (including access to water supply and sanitation) to improving health status to providing space for home-based workers, etc.; (ii) it leads to capital formation among the poorest of the urban population, something economists view as the penetration of capitalism at the bottom of the pyramid; (iii) it protects households in times of hazard and risk of inclement weather and from prying eyes of the society; (iv) it acts as collateral security for micro finance; (v) it provides the urban poor with an address, which is necessary for accessing entitlements in urban areas; and (vi) above all, it is an essential component of redistributive policies and hence an important input in urban equity. In addition it provides a secure place to raise and socialize a family. In housing, the importance is of tenure security, which is housing without threat of eviction.

In case of women, there are additional benefits of property ownership. It has been argued that the property ownership by women influences gender relationships both within and outside the household. For example, Basu (1999) states that property ownership benefits women by increasing their intra-household bargaining power and decision-making, reduced levels of domestic violence, greater control by women over the education and welfare of children, especially girls and reduced anxiety about abandonment and physical security. It is also argued that property-owning widows living alone or with their children were treated with much greater respect and consideration than those who did not own property (Chen 1998; Singh 2004). Thus, housing takes care of both, practical as well as strategic gender needs.

A primary consideration in gender and housing is the issue of women's security of tenure and control of assets (Baruah 2010). Ownership of land and housing provides security against poverty by providing a secure place to live, connection to livelihood, shelter during emergencies and collateral for future investment. For a variety of social and economic reasons, women are often excluded from owning land and property, yet their access to property has the potential to create conditions for overall women's empowerment. Additionally, studies have shown that rental units are largely occupied by women and women-headed households, who tend to be more economically vulnerable than male-headed households.

Of similar concern is the interplay between the triple role of women and differentiation among household users. Because women's productive work is oftentimes interwoven with their reproductive work throughout the day, women tend to be primary users of homes. As such, factors such as maintenance, availability of on-site facilities such as crèche and open spaces and proximity of home to livelihoods and markets allow women to maintain greater flexibility and freedom of choice in balancing their obligations and work. More women than men tend to work out of home. Hence, home is as much for productive work of women as for their role as reproductive workers.

From the strategic needs point of view; '*A Room of One's Own*' by Virginia Woolf in 1929 brought in the desirability of one's own space or one's own property for women, and indicating their freedom in self-development independent of men or family. In a sense, it presented women's life encumbered by social relations. Patriarchy binds women to 'acceptable social norms' within the constraints of patriarchy, wherein, women is a possession of a family. From economic point of view too, there have been arguments about women's right to property. Woolf's argument has been from social point of view.

Engels had argued that women's subordination is linked to emergence of private property. A corollary to that is an understanding that women's emancipation cannot be obtained within the framework of private property regimes (Engles 1985; Mies 1998). Mies (1998) has argued that "women's subordination is connected to men's accumulation of private property at the cost of women's labor and that the solution lies in women accumulating resources that have exchange value" (Baruah 2010: 17). But, Agarwal (1994) argues that within the contemporary world, where capitalist systems hold sway across countries and are all pervasive, women would still gain if they had control over the productive resources; which is their own labour, capital and land.

D. Gender and Transportation Mobility

Mobility through transport has formed an important aspect of '*Woman's Quest for Freedom*', as desired by Willard in a book she wrote in 1895 titled *A Wheel within a Wheel* (Hanson 2010: 5). Willard saw the bicycle as a symbol of mobility and

freedom, because it not only allowed for long distance travel on her own, but also gave a sense of exhilarating feeling of confidence and accomplishment (she was learning to ride bicycle at an age of 53), a sense of expanded possibilities, aspirations and personal growth and also riddance from wearing 'womanly dresses' (Hanson 2010: 6). Interestingly Willard saw "women's physical prowess on the bicycle as a challenge to male dominance, a means of improving on prevailing norms of masculinity and an impetus for transforming gender relations." Willard writes: "The old fables, myths and follies associated with the idea of woman's incompetence to handle bat and oar, bridle and rein and at last the cross-bar of the bicycle, are passing into contempt in presence of the nimbleness, agility and skill of 'that boy's sister'." (Willard 1895: 40-1, as quoted in Hanson 2010: 6).

Transport and mobility have an important role to play not only in helping to meet women's practical needs such as access to maternal healthcare, but also in contributing to the strategic empowerment of women through promoting access to employment and socio-political upliftment (Venter et al. 2007: 654). Women, on account of their multiple roles tend to juggle home and off-home, paid and unpaid work responsibilities and their activities tend to get tied to household (Turner and Fouracre 1995). They tend to make shorter trips than men, particularly for work (Hanson 2010; Anand and Tiwari 2006) and value safe local streets (Hanson 2010; Duchène 2011). They are forced 'walkers' or 'no-choice' walkers. But, if public transport is available then they tend to use public transport more than men. For example, studies have shown that women in India are far more dependent on public transportation to move about the city than men (Khosla 2009; Srinivasan 2008; Srinivasan and Rogers 2005). Women have lower vehicle ownership than men and hence use public transport (Root et al. 2000) wherever available or use para-transit in the absence of public transport. If public transport is non-affordable (Mahadevia et al. 2012), they tend to not make a trip or walk. Culturally, in India, women do not cycle as much as men do among the low-income households. Women's travel patterns are characterized by shorter, more frequent trips throughout the day, as they perform tasks related to their reproductive, productive and community management work. In fact, while women tend to assume a higher share of their household's travel burden, taking more trips associated with their reproductive role, they have inferior access to both private and public transportation. They tend to make fewer long trips than men and hence are not in need of fast moving transport options in most cases, except in the metropolitan cities. Fears of harassment and violence in public areas as well as male-centric transport services are critical limitations to women's physical mobility throughout the city (Moser 1993).

In this light, provision of safe, well-lit and accessible footpaths may be seen as a gender-specific priority. Difficulty in accessing safe and reliable transportation and footpaths is a form of social exclusion which restricts movement of women, and is particularly restrictive in regards to potential economic output (Duchene 2011). As such, transportation services such as connectivity, frequency, route coverage, safety

and cost are significant considerations that should be evaluated from a gender perspective. But, if there is expansion of infrastructure to support private motorized transport through four-wheelers and two-wheelers, women do not benefit much. But, if footpaths are widened, are made well-lit, have various activities on the footpath such as vending that acts as 'eyes on the street', these benefit women. If the public transport network is extensive with closely located bus-stops and affordable fares, women tend to benefit. If the Non-motorized Transport (NMT) such as cycle-rickshaws and now in their place e-rickshaws are introduced on the city roads, women tend to benefit.

E. Security of Livelihood and Economic Empowerment

One commonly identified strategic gender need is a more equitable distribution of and access to economic power, which includes security of livelihood (Young 1997). Many of the benefits of GRB in the urban development sector address the challenges related to the triple role of women. By easing time burdens spent accessing basic services such as water and solid waste management, more time is freed up for women to dedicate to other roles, including their productive roles. Other barriers to livelihood security include issues such as housing insecurity, insecurity of land tenure, control over and/ or ownership of assets, and lack of access to public transportation. When practical needs such as these are addressed, it may become increasingly feasible for women to achieve security of livelihood and economic empowerment.

F. Women's Collective Empowerment

Lastly, but perhaps most importantly, the implementation of GRB in the urban development sector has the potential to contribute to women's collective empowerment. GRB provides the opportunity for women from a wide variety of communities and social positions to become more directly involved in the planning and development process. By restructuring the development process to include GRB as a means to "ensure widespread consultation at all levels of society about development goals and the processes by which those goals are to be reached and the resources needed to achieve them" (Young 1997: 373), government becomes more responsive and accountable to women, leading to greater political representation and empowerment. Additionally, by providing a means to accomplish other strategic gender needs such as security of livelihood and greater mobility, GRB further contributes to the end result of women's empowerment.

The above examples provide a starting point for identifying areas for GRB and gender based urban development to more equitably share urban resources and infrastructure among women and men. Sufficient participation and prioritization exercises would be necessary to identify specific approaches to GRB in each sub-sector.

4. Analysis of Gender Needs in National Urban Policies

Given the relation of gender needs with the four sub-sectors of urban development in the preceding section, it is imperative to (i) briefly understand the urban governance structure and how fund allocations follow through the three tiers of the government; (ii) analyse current national policies and schemes being implemented across the four sub-sectors in urban areas of India from the perspective of addressing gender needs; and (iii) take an account of the projects being implemented in the two case study cities under these programmes.

4.1 Structure of Urban Governance in India

There are a range of different actors involved in the field of Urban Development, at the three tiers of the government (See Figure 4.1). At the national-level, the Ministry of Urban Development (MoUD)[9] and the Ministry of Housing and Urban Poverty Alleviation (MHUPA)[10] are the two key ministries involved in the field of Urban Development. Besides these, Ministry of Finance is involved for funding projects through multi-lateral funding agencies such as World Bank, Asian Development Bank (ADB), etc.

Further, depending on the level of decentralization in the state, besides state-level urban departments such as the Department of Urban Development, Department of Municipal Administration, Department of Housing and Slum Up-gradation, Department of Water and Sanitation and Department of Transport, multiple parastatal agencies/ SPV/ Urban Development Authorities (UDAs) under the purview of the concerned state urban development department, providing and monitoring different urban services may be present.

While local-level agencies may include Metropolitan Planning Committee, Regional Development Authority or UDA; city-level urban service parastatals for water supply, sanitation or public transport; city-level special authorities or SPVs created, besides the ULB. There might be combinations wherein both state and city-level agencies might be involved.

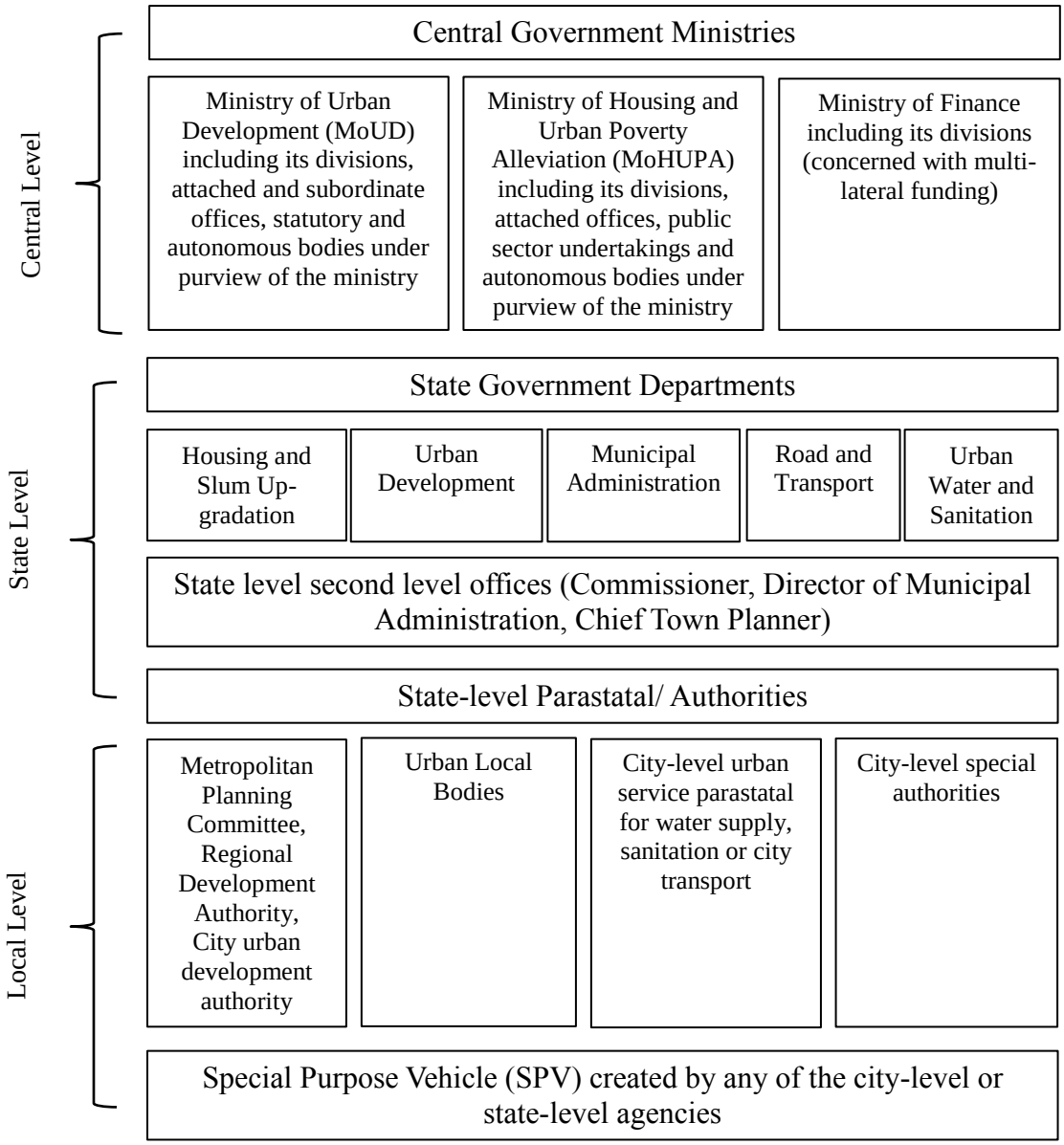
State-level and city-level parastatal agencies play an important role in provision of services such as water supply and sewerage, planning and development of lands, etc. These parastatal agencies are generally an extension of the state governments. Besides, undertaking responsibilities for provision of services that are seen to spill over municipal jurisdictions, they are seen to be in a superior position to address the

[9] Apex authority at the national level to formulate policies, sponsor and support programme, coordinate activities of various Central Ministries, State Governments and other nodal authorities and monitor programmes concerning all issues of urban development in the country.

[10] Apex authority at the national level to formulate policies, sponsor and support programme, coordinate the activities of various Central Ministries, State Governments and other nodal authorities and monitor the programmes concerning all issues of urban employment, poverty and housing in the country.

infrastructure tariffs and pricing issues. They are given powers that may limit or bypass the powers of the ULBs. Often they operate as private entities or forge alliances with private corporate sector. Level of transparency within these parastatals agencies varies across the country.

Figure 4.1: Institutional set-up at different tiers of the Government in India.



Source: Adapted from AFD (2014) by the authors.

For instance, the table below illustrates various institutional set-ups for operating urban water supply systems in various Indian cities along with their spatial jurisdiction of operations.

Table 4.1: Institutional set-up for Operating Urban Water Supply Systems

Institution	**Example**	**Spatial Jurisdiction**
Public Health Engineering Department (PHED)	Rajasthan	State-wide
State-level parastatal agency	Kerala, Delhi	State-wide

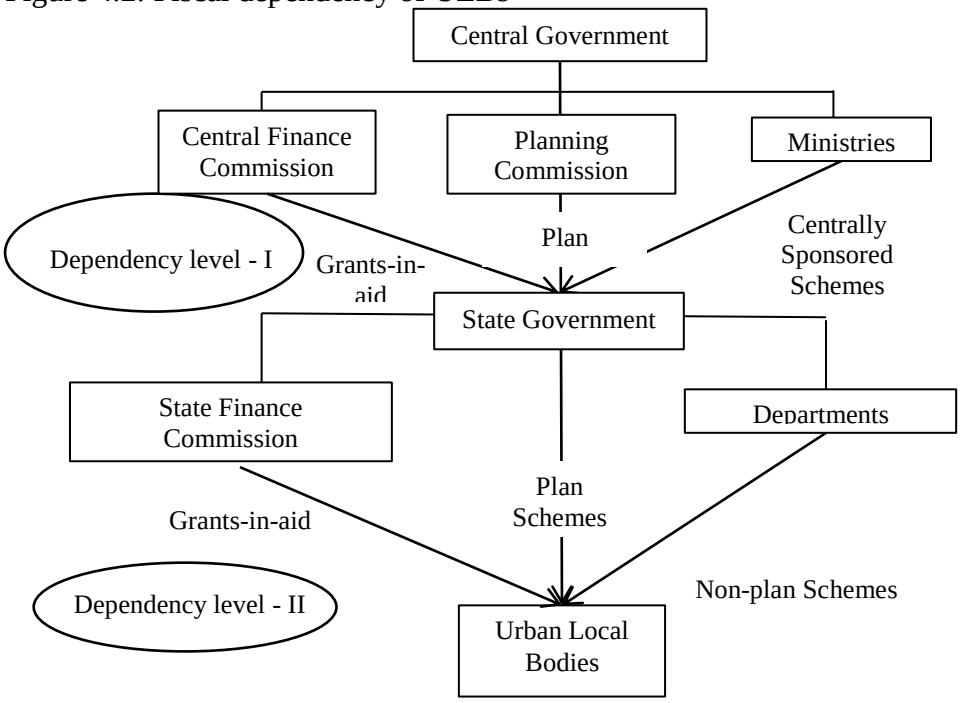
Metropolitan agency	Bangalore, Chennai, Hyderabad	Metropolitan-wide
City-level specialized agencies	Uttar Pradesh Jal Sansthan/ Jal Nigam	Lucknow, Varanasi
Municipal Corporation, Municipalities (small)	Gujarat, Maharashtra, Andhra Pradesh, Uttar Pradesh, Tamil Nadu	City jurisdictions.

As part of reforms under Jawaharlal Nehru National Urban Renewal Mission (JNNURM), an attempt has been made to make various agencies involved in urban development more transparent and accountable to citizens. However, specific documents with information on revenue and expenditure operations of parastatals may be difficult to find in public domain and/ or would be required to be collected from multiple sources/ agencies.

4.2 Pattern of Financial Allocations for Urban Development

Although, major cities are able to raise and generate their own resources, however in case of smaller towns, dependency on inter-governmental transfers is significantly high due to inadequate fiscal resources of smaller ULBs to meet their expenditure requirements. As per provisions of the Constitution, funds from central government are devolved to the state governments. The State Finance Commissions (SFC), constituted once in every five years, make recommendations on (i) assigning taxes, levies and duties to ULBs; (ii) sharing pattern of taxes, duties and levies between states and ULBs; (iii) grants-in-aid; and (iv) any other measure that would augment finances of the ULBs. Following recommendations of the SFC, state governments are required to devolve funds to the ULBs.

Figure 4.2: Fiscal dependency of ULBs



Source: Mohanty et al. 2007.

Further, ULBs also receive funds through many national-level programmes such as JNNURM, and the more recent Atal Mission for Rejuvenation & Urban Transformation (AMRUT), Smart Cities Mission and Housing for All. The state-level programmes may be more focused of a particular class of cities or region or may be even state-wide. Most of these programmes include technical assistance and capacity building. Broadly they can be classified as (i) government-led integrated urban development programmes; (ii) donor-funded programmes for financing of urban infrastructure projects; and (iii) funds or trust set-up to leverage urban development projects. These may include loans for specific projects and programmes. Many ULBs also borrow funds in order to manage fiscal stress, with state government guarantees from Housing and Urban Development Corporation Limited (HUDCO), financial institutions, banks, open markets, external lending agencies such as International Monetary Fund (IMF), etc. However, there is a limit to how much ULB's can borrow from external sources, as all loans are subject to state government approval and funding routed through GoI.

4.3 Gender Needs in National Urban Policies

Works of national-level programmes such as JNNURM, Rajiv Awas Yojana (RAY), etc., have been implemented in many cities. This section scrutinizes the implementation of the programmes from gender lens. Also, from June 2015 onwards, four new missions to promote urban development, namely, Smart Cities Mission, AMRUT, Pradhan Mantri Awas Yojana - Housing for All (Urban) (PMAY) and *Swachh Bharat* Mission, have been introduced in the country. It is important to see whether these new schemes are gender-sensitive and if not; the possibility and scope of engendering them have been suggested.

A. Jawaharlal Nehru National Urban Renewal Mission (JNNURM)

In the last decade, massive funding central government funding has been provided to the city governments for planned urban development through the JNNURM – the most ambitious programme of urban renewal in the country's history having three main interrelated and complimentary components – governance, infrastructure development and provision of basic services to the poor.[11] Operational in a mission mode through two ministries – MoUD and MHUPA, the primary objective of JNNURM was to create economically productive, efficient, equitable and responsive cities by investing an amount of approximately $20 billion over a period of seven years.

Various scholars and researchers have questioned the basic design of this programme. It has been widely argued there is greater bias on improving the efficiency in the functioning of overall city economy and meeting infrastructural deficiencies at macro-level, instead of addressing issues of the distributional inadequacy and improving the access of the poor, thus invariably leading to exclusion of various socio-economic

[11] Refer http://www.jnnurm.nic.in for details.

groups from urban governance, from the development of urban policies and from the planning of our cities (Kundu and Samanta 2011; Mahadevia 2006; Mahadevia et al. 2009). Even the High Powered Expert Committee (HPEC) observed that JNNURM lacked a well-crafted strategy for inclusion of economically and socially weaker sections in urban planning (UN Women 2012). Citizen groups have also questioned the undemocratic and non-participatory manner in which the City Development Plans (CDPs) have been prepared (UN Women 2012).

Also, as feminist research indicates that the standard in urban planning and governance frameworks is often taken to be male dominated – effectively excluding women and their concerns (See Kerkin and Huxley 1993; Sandercock and Forsyth 1992); which continues to be reflected in the nature and quality of infrastructure and services in spite of being challenged and disapproved, repetitively, by feminist scholars and women's rights activists (Tawa Lama-Rewal 2011). Neither do the policies address the widening gaps and disparities between women and men as well as between different groups of women nor acknowledge issues such as women's vulnerability due to lack of access to housing and sanitation or lack of safety in desolate/ very crowded public spaces (UN Women 2012).

Even, mega intervention like JNNURM was no exception. While the focus of JNNURM was on urban infrastructure development and implementation of reforms, gender perspective within JNNURM has been grossly overlooked (Khosla 2009). Neither did the CDPs reflect the priorities of all stakeholders, let alone women; nor did the JNNURM guidelines make any conscious effort to ensure that groups representing women's needs and rights were included as stakeholders (whether they speak for rich, middle income or poor women) (Khosla 2009). Even the DPRs failed to respond to the emerging diverse trends in household types.[12] Hence, in absence of a stated commitment towards integrating gender concerns, the municipal staff, elected representatives, state and national agencies lacked the necessary motivation or skills/ capacities to ensure the same (UN Women 2012).

B. Basic Services to the Urban Poor (BSUP)

Besides these, there were issues with regards to women's access to basic services and urban infrastructure. While JNNURM adopted security of land tenure as part of its mandatory reforms through the Basic Services to the Urban Poor (BSUP), various independent reviews of the programme highlight that guaranteeing tenure security to households living in slum settlements has not seen much progress. Mahadevia (2011b) argues that despite being so critical, security of land tenure has been given the least importance because urban lands have many competing uses, particularly in countries like India that are pursuing rapid economic growth policies. Also, the common strategy adopted by most of the city governments under BSUP, under the

[12] Urbanization process is accompanied by an increasing diversity of household types, with single adult households (which are invariably headed by women) and female headed households are emerging as an important and growing household form (Beall 1995).

guise of beautification and redevelopment, has been resettlement of people living in slums into new housing units, which are located away from the city limits. While several reports have reported about the poor quality/ lack of services in these new housing complexes, especially with regard to water supply and sanitation; various studies show evidence of loss of livelihoods, increased drop-out rates in school, deteriorated quality of life and health, reduced income levels, thereby recreating poverty on the whole (Sen 2006; Mahadevia 2011a). In such situations, women face greater risks and vulnerabilities which often get compounded by their multiple identities – being part of a patriarchal society, engaged as informal workers, members of minority community and as primary care givers (Sen 2006). Furthermore, allocation of BSUP housing was primarily based on establishing eligibility criteria and ensuring that the targeted households get allocation of housing units. A gender analysis of such housing programmes or upgrading schemes or infrastructure development reveals that women are often excluded by conventional eligibility criteria (UN Women 2012). Similarly, there were considerable gender differences observed in the projects being implemented in the transportation sector. Sufficient and unobstructed pedestrian walkways, well-light roads and bus shelters, stringent security systems, safe commuting options, etc., are still rampantly missing in many parts of our cities, thereby constraining women's mobility and economic productivity.

C. Rajiv Awas Yojana (RAY) [13]

The multi-pronged approach of RAY focused on (i) bringing existing slums within the formal system and enabling them to avail of the same level of basic amenities as the rest of the town, in an attempt to redress the failures of the formal system that lie behind the creation of slums; and (ii) tackle the shortages of urban land and housing that kept shelter out of reach of the urban poor and forced them to resort to extra-legal solutions in a bid to retain their sources of livelihood and employment. The scheme was progressive in many fronts, in comparison to JNNURM. Besides guaranteeing universal access to four basic services (water supply, sanitation, paved roads and electricity), it stressed on in-situ up-gradation, gave no-eviction guarantee for all tenable slums and rehabilitation of shelter and livelihoods for untenable slums, and counted for community participation. Most importantly, it was forthcoming in terms of emphasizing upon assigning property rights, preferably in the name of wife or jointly in the names of both husband and wife and also subsidized beneficiary share to minimum in case of vulnerable female-headed households.

D. National Urban Transport Policy (NUTP)

Introduced in India in 2006, NUTP has emphasized on public transport for which funds were provided by the national government through the JNNURM. Although the policy is progressive in terms of its objectives focusing on people rather than vehicles, bringing more equitable allocation of road spaces to various users, encouraging

[13] Introduced in 2009-10, the programme has been discontinued in 2014. Works of approved projects are still under progress whereas no new projects have being undertaken from 2014 onwards.

greater use of public transport and NMT and enabling establishment of multi-modal public transport systems which are well-integrated (MoUD 2007); it completely overlooks the gender perspective amongst the users.

E. Smart Cities Mission

The Smart Cities Mission, which aims to make 100 cities 'smart' based on application of information and communications technology (ICT) to achieve sustainable and inclusive development with inclusive and citizen friendly governance amongst its key features. If put into action, these are highly desirable; but the policy document, itself, does not recognize the varying needs of multiple groups of stakeholders including women. Apart from "ensuring safety of citizens' especially children, women and elderly", it makes no mention about addressing gender-based needs.

However, the process for preparation, selection, implementation and monitoring of specific projects under this particular mission can be engendered by (i) ensuring participation and representation of women of different income groups, occupations, communities, etc., across all stages – including stakeholder consultations, citizen participation, etc., as the Smart Cities initiative unfolds; (ii) ensuring that monitoring process is mindful of gender sensitivities – at present, none of the proposed institutional mechanisms, at all three tiers, mention about gender representation; (iii) ensuring that core infrastructural elements of a Smart City specifically target gender-sensitive needs, e.g. including property titles for women in affordable housing, safe public spaces and transport through multiple approaches such as mixed land use, public activities round the year, street lights, proper space design, special emphasis on women belonging to Schedule Castes (SC)/ Schedule Tribes (ST)/ Other Backward Classes (OBC), minority communities, destitute, abandoned, single-women headed households, undertaking mandatory gender safety audits etc.; (iv) ensuring that systems for data collection include gender segregated data, as it is, currently one of the main challenges faced during any GRB analysis. This data, further, needs to be classified according to caste, income groups, age etc. The availability of this data in the Smart City Plan (SCP) for its evaluation as well as availability to the public can be particularly useful in future.

F. Atal Mission for Rejuvenation & Urban Transformation (AMRUT)

AMRUT is to cover 500 cities focusing on providing basic services such as water, sewerage facilities, storm water drains, green spaces and parks and public transportation facilities akin to JNNURM. The policy document recognizes that the outcomes of this particular programme will be valued by all citizens, particularly women. Also, access to water and sewerage connection at household level would definitely benefit women – save their time which can be utilized to further livelihood opportunities, ensure their security (having sewerage connection at household level would mean having toilet in the household – which would ensure their security, minimize vulnerability, etc.) as well as reduce health risks.

However, apart from identifying women as beneficiaries, it makes no mention of a more gender-sensitive or participatory approach. Like suggested in the Smart Cities Mission, AMRUT can be engendered on the following possibilities: (i) while cities would be using the Census 2011/ MoUD baseline data to assess existing service level gaps, plans prepared to bridge existing gaps should be improvised in such a format that gender dis-segregated data is collected, henceforth; (ii) ensuring adequate women representation/ involvement at all tiers of the proposed institutional mechanism which would be set-up for supervising this particular Mission; and (iii) special focus on building capacities of the involved officers/ functionaries, especially female officers/ staff, on GRB as a component in the workshops, seminars, research studies, training needs assessment, etc., from the initial stage itself.

G. Pradhan Mantri Awas Yojana - Housing for All (Urban) (PMAY)

Through PMAY, it is estimated that the around two crore (20 million) houses (The Hindu 2015) would be constructed for rehabilitation of slum-dwellers and promotion of affordable housing for the urban poor. This mission is to provide central assistance for in-situ rehabilitation, credit-linked subsidy, affordable housing in partnership and subsidy for beneficiary-led individual house construction. This scheme states that preference among beneficiaries would be given to manual scavengers, women widows, minorities, disabled persons, transgender and persons belonging to SC/ ST/ OBC; asserts about joint ownership titles/ preference of giving ownership titles in the name of female in the beneficiary's household – which are progressive.

H. *Swachh Bharat* Mission (SBM)

Although *Swachh Bharat* Mission (SBM) has been incorporated as one of the reforms in the AMRUT policy guidelines, this mission, like the former two, needs to look into the extent it can focus on women, especially. Major component of this mission is to build toilets at household level, community level and in public area; this mission also bring focus on solid waste management (SWM), public awareness and capacity building. It has already been established that sanitation is a vital to women. Thus, SBM needs to take into account their suggestions before any intervention is carried out both in terms of provision of toilets and SWM systems. The policy does acknowledge in pro-actively prioritizing households with vulnerable sections such as pensioners, girl children, pregnant and lactating mothers.

While the policy is sensitive specially focus on vulnerable sections like girl children, pregnant and lactating mothers, it is essential to (i) overall include women's needs, in general considering their vulnerability, especially in the lower strata of the society; (ii) citizen engagements should essentially be held with different groups of women which could be based on income, occupation, caste, etc., while conceptualizing the city sanitation strategy; (iii) social awareness and involvement of women in the programme should be encouraged; (iv) monitoring mechanisms at lower level through ward committees, especially those of women, should be encouraged; (v) adequate attention should be given to the designs of public and community toilets in order to

ensure the safety and security of the female users; and (vi) monitoring and evaluation formats with regards to targets and achievements of the scheme, should ensure that gender dis-segregated data is collected, henceforth.

Although these new policies, through their respective policy documents, do not indicate a radical shift in perspective regarding women as compared to its predecessors; implementation of these policies are still in their nascent stage, thus their success in including women's needs and rights in urban management and planning yet remains to be seen.

4.4 Progress of On-going Programmes and Schemes in Bhopal and Pune

As mentioned in the above chapters, any GRB exercise conduced with respect to urban development in India needs to begin from the lowest tier of governance, the city level. The following section captures the tangible details of both national and state-level policies in the two case study cities – Bhopal and Pune. Currently, many infrastructure and housing projects being implemented through various national (limited to JNNURM and RAY at present)[14] and state-level programmes as well as funded through external funding agencies under the selected sub-sectors.

A. Bhopal

Table 4.2 gives details of on-going schemes in the city. Projects related to water supply, sanitation and transportation sectors are being covered under the Urban Infrastructure and Governance (UIG) component of JNNURM while housing projects are included in the BSUP component of JNNURM as well as under RAY. Besides these, works related to water supply, sanitation and infrastructure up-gradation in slum settlements have been undertaken under the ADB-funded project UDAY.

Under the UIG sub-component of JNNURM, in total 10 projects, costing around INR 1,194.31 crores, have been approved in city, out of which three projects, under transportation sector, were approved additionally during the transition phase of the programme.[15] The sector-wise project cost break-up is as follows – 62 per cent under water-supply, 34 per cent in public transportation, 3 per cent under storm water drainage and 2 per cent under urban renewal. Around four projects have been completed whereas remaining projects are under progress. Under water supply, works for distribution network of Bhopal municipal area, water supply to gas affected areas, Narmada water supply have been under taken. Under transportation, implementation of BRTS, development of walkways, cycle tracks, etc., have been undertaken.

---

14 Cities are preparing their respective plans for the recent programmes, including Smart Cities Mission, AMRUT etc.

15 For details, refer Projects Implementation Status under UIG : Madhya Pradesh as on 1st August 2014 available at http://jnnurm.nic.in/wp-content/uploads/2014/08/MP.pdf and Projects Implementation Status under UIG : Transition Phase as on 1st August 2014 available at http://jnnurm.nic.in/wp-content/uploads/2014/08/61-projects-list.pdf

Project UDAY has received financial support from ADB and it has been executed in Bhopal and three other cities of the state. The financial sharing of the project cost consists of 65.86 per cent from ADB, 19.30 per cent from state government, 14.70 per cent from respective ULBs and remaining from UN Habitat. In Bhopal, works worth INR 231.85 crores have been undertaken which include (i) laying of distribution mains and transmission mains, rehabilitation of pumping stations and water treatment plants (WTPs), construction of over-head service reservoirs (OHSRs), installation of meters, etc.; (ii) laying of sewer network, construction of sewage pumping station, rehabilitation of pumping station and sewage treatment plant (STP); (iii) procurement of equipment for solid waste management; (iv) up-gradation of 15 slum settlements including water and sanitation infrastructure; and (v) community development and vocational training initiatives.

Under housing sector, around 13 slum resettlement and rehabilitation projects, costing around INR 280.81 crores, have been approved in Bhopal under the BSUP sub-component of JNNURM. Under these, a total of 13,399 DUs have been constructed, out of which 13,159 DUs have been occupied as of March 2017 (MHUPA 2017a). Similarly, one project, costing around INR 74 crores, has been sanctioned under RAY in Bhopal. Under this, around 1,204 DUs would be constructed, out of which 250 DUs are completed and 954 DUS are in progress as of March 2017 (MHUPA 2017b).

Table 4.2: Sector-wise details of on-going programmes in Bhopal

Programme	Sector	No. of Projects	Project	Project Cost (in INR Cr.)
JNNURM	Water Supply	3	Water Supply to Gas affected areas	14.18
			Narmada Water Supply Project for Bhopal	306.04
			Water supply distribution network of Bhopal municipal area	415.46
	Public Transport	4	Pilot Corridor (New Market to University) for Bus Rapid Transit System (42.19 km long)	274.44
			BRTS supplementary DPR, Bhopal	82.76
			Cable stay-bridge at Kamla Park	27.34
			Development of Walkway, Cycle track, Sit-out, Parking and food zone at VIP road along the Bada Talab from Koh-e-fiza crossing to Khaungaon.	16.47
	Storm Water Drainage	1	Channelization of *Nallah* (Storm Water Drain)	30.57
	Urban Renewal	2	Renewal of Basic Infrastructure in Categorised Scrap Mart in Bhopal	8.11
			Renewal of Up-gradation of Basic Infrastructure in M.P. Nagar, Bhopal	18.94
Project UDAY	Water Supply	NA*	NA*	231.85
	Sewerage			
	SWM			
	Slum Up-gradation			
	Community development and vocational training			

BSUP	Housing	13	Construction of 212 DU's with Basic Infrastructural facilities Inderpuri (Kalpna Nagar), Bhopal, Madhya Pradesh	2.54
			512 Houses with Basic Infrastructure Facilities including Development of Weekly Market, Kotra, Bhopal, Madhya Pradesh	9.36
			896 DUs development of Residential Colony for Slum Dwellers at Indra Nagar (Phase.II), Bhopal, Madhya Pradesh	9.11
			Construction of 1,440 DUs with Infrastructure Facilities at Shyam Nagar, Bhopal, Madhya Pradesh	16.00
			1,216 DUs Development of Residential colony for slum dwellers at Indira Nagar, Madhya Pradesh	17.10
			1,848 DUs DPR for resettlement of Slum Areas Ganga Nagar and Aradhna Nagar at Kotra, Sultanabad, Bhopal, Madhya Pradesh	11.56
			1,872 DUs Rehabilitation of Slum Dwellers at Baba Nagar Slum By Municipal Corporation of Bhopal, Shahpura, Madhya Pradesh.	23.20
			Slum and poor locality integrated area Development Scheme Phase-1, Bhopal, Madhya Pradesh	39.50
			Slum and poor locality integrated area Development Scheme Phase-2, Bhopal, Madhya Pradesh	41.11
			2,299 DUs BSUP Project for Slum Redevelopment and Rehabilitation of identified Slums Part II, Bhopal, Madhya Pradesh	15.05
			Construction of 3,600 DUs with infrastructure facilities at Roshanpura, Bhopal, Madhya Pradesh	Project Cancelled
			DPR for resettlement of Atal Ayub Nagar slum, Police lines slum, Koh-e-fiza slum, Kechi Chola new Belar to Bajpai Nagar slum at Idgah Hills, Madhya Pradesh	49.62
			DPR for redevelopment of identified slums (Arjun Nagar, Bheem Nagar, Madrasi Colony & Rahul Nagar) in Bhopal, Madhya Pradesh	33.90
			2,858 DUs for Slum Redevelopment and Rehabilitation of identified slums Part-I (Bharat Mata Nagar, Naya Basera & Arjun Nagar), Madhya Pradesh	12.76
RAY	Housing	1	Pilot DPR of identified 4 Slums (1. Arjun Nagar, 2. Jheel Nagar, 3. Shanti Nagar & 4. Ambedkar Nagar), under RAY	74.00

Note: NA* - details of works undertaken sector-wise under project UDAY and their costs are unavailable.

Source: Compiled from different sources.

B. Pune

In Pune, two projects for the water supply system have been approved under the JNNURM. Other water supply projects under the Pune Municipal Corporation (PMC) include (i) 24x7 water supply scheme (estimated project cost INR 1,800 to 2,000 crores), construction of 200 million litres per day (MLD) WTP at Warje water-works; (ii) laying closed conduit of 2,500 mm diameter from Khadakwasla dam to Cantonment water works enroute Parvati water-works to avoid uptake from open canal; and (iii) laying of closed conduit of 1,600 mm diameter from Khadakwasla dam to Warje water-works (PMC 2012).

Table 4.3: Details of UIG projects[16]

Name of the Project	Approved cost (in INR Cr.)
Augmentation of water supply system for area along Pune Nagar Road under PMC	380.17
WTP & raw water pumping station at Wadgoan (Budruk), Pune under PMC	118.07

Source: JNNURM website.

A sewerage scheme has been proposed under National River Conservation Programme (NRCP) which includes collection system in Balewadi area (43 kms); trunk mains & conveyance mains (12 Nos., 46.03 kms); STP's for 100 per cent treatment of sewage generated by city upto year 2044; up-gradation of two intermediate pumping stations; and capacity Building of municipal staff and awareness programmes. The project is awaiting approval.[17] Table 4.4 gives details of sewerage project sanctioned under JNNURM.

Table 4.4: Details of completed sewerage projects under JNNURM

Sr. No.	Location	Capacity(MLD)	Sanctioned Cost (in INR Cr.)
1	Baner	30	9.48
2	Mundhwa	45	13.87
3	Kharadi	40	12.58
4	Naidu	115	23
5	VIttalwadi	32	10.67
6	Topkahana Pumping station	92	3.25
7	Kasba rising main (1575 RM)		5.55
8	Kasba Pumping station	122	2.45
9	Topkhana rising main (2250 RM)		4.95
	Total		**86.13**

Source: PMC, 2012.

In the previous CDP 2006-12 prepared for JNNURM, investment of INR 803.9 crores was proposed for sewerage and sanitation. Around INR 86.13 crores were sanctioned under JNNURM for the construction of STP and pumping stations through which capacity of sewage treatment increased from 305 MLD in 2006 to 527 MLD in

[16] As of August 1, 2014, accessed from http://jnnurm.nic.in/wp-content/uploads/2014/08/61-projects-list.pdf on September 4, 2015.

[17] As per the information available on http://envfor.nic.in/division/national-river-conservation-directorate-nrcd, accessed on September 4, 2015.

existing scenario. Through projects under JNNURM, the collection efficiency of sewerage network has improved from 68 per cent in 2006 to 70 per cent currently.

Under JNNURM funding for construction of storm water drains, out of 23 basins, works in four basins are under progress. The project works covers about16 kms length on six major *nallahs* in the city. The sanctioned cost is INR 25.86 crores. The major works include *nallah* channelization and construction of compound wall with fencing along the banks of *nallah* (PMC 2012).

Various government agencies are involved in building public housing in the city such as the Slum Rehabilitation Authority (SRA), Maharashtra Housing and Area Development Authority (MHADA) and Urban Development Department, Government of Maharashtra (GoM). Formed on similar lines of Mumbai SRA, the authority has a total of 76 registered projects which would benefit 29,677 households (Mashal 2010). MHADA's role is limited to monitoring and funding of housing projects and not implementation. Pune Housing and Area Development Board, a regional unit of MHADA, has territorial jurisdiction over 14 districts of Pune Division, including Pune and Pimpiri-Chinchwad.

Table 4.5: Details of MHADA Schemes in and around Pune

Schemes in Pune	27
Tenements in Pune	16,909
Area covered by MHADA schemes in Pune	167.49 ha

Source: Mashal, 2010.

Under BSUP, around eight projects costing INR 221.48 crores, have been sanctioned (See Table 4.6). Under these, around 7,752 DUs would be constructed, of which 7,234 DUs have been completed and 5,878 have been occupied.

Table 4.6: Details of BSUP projects

Projects	Project cost (in INR Cr.)	DUs sanctioned	DUs completed	DUs occupied
Revised proposal of night shelter dormitories project for urban poor	5.39	NA	NA	NA
Revised Street vendor rehabilitation project	2.52	NA	NA	NA
Revised integrated rehabilitation project for urban poor staying in slums in ecologically dangerous locations in Pune - Warje slum	32.92	1,344	1,344	1,216
Curtailed integrated rehabilitation project for urban poor staying slums in ecologically dangerous locations in Pune (Hadapsar)	39.83	2,408	2,408	1,234
In-situ slum rehabilitation in the city of Pune at Yerwada, Parvati, Mundhwa, Ghorpadi, Kothrud slum	140.82	4,000	3,482	3,428
1680 DUs at Lohagaon for the urban poor staying at slums falling under road widening, hill top/ slopes and canal sides in Pune Maharashtra	-	-	-	-
4480 DUs at Hingne- Kothrud for the urban poor staying at slums falling under road	-	-	-	-

widening, hill top/ slopes and canal sides in Pune Maharashtra				
1792 DUs for the Urba Poor staying in Slums in elogically dangerous locations in Pune (Kondhwa Slum), Maharashtra	-	-	-	-

Note: This list does not include cancelled projects as well as those located in Pimpri Chinchwad.
Source: MHUPA, 2017a.

In Pune, following various slum improvement schemes have also been undertaken:

- Nirmal Bharat Yojana – a common toilet scheme for slum dwellers.
- PMC has set up 773 sanitation blocks in slum areas, and constructed around 12,000 toilet seats under paid toilet scheme.
- Lok Awas Yojana under which around 2,000 tenements have been proposed for slum dwellers by the MHADA.
- Valmiki Ambedkar Awas Yojana (VAMBAY), supported by the PMC wherein slum dwellers residing since January 1, 1995 were eligible for INR 50,000 subsidy for a house of 21 sq. mts. Around 7,875 houses have been constructed in Pune (Mashal 2010).

Under the state government in-situ redevelopment scheme wherein private developers would rehabilitate slum dwellers in free housing units of 25 sq. mts. carpet area against the incentives of transferable development rights (TDR) and increased floor space index (FSI). Works in around 78 slums have been undertaken till now.

Most of these infrastructure projects, in both cities, cater to public housing, water and sanitation and transportation sectors. In case of BSUP housing, construction and allotment process in Bhopal, has found to have had multiple inconsistences, which do not even meet the needs of the beneficiaries, and women much lesser.[18] The same has been said for Pune, as most BSUP projects have been constructed shoddily, infrastructure not provided, and lack of beneficiary participation.[19] The Slum Rehabilitation Schemes (SRS) in Pune much depends on the private developers and the slum dwellers.

However, lack of availability of information about projects being undertaken through these national level programmes are not put out in the public domain, thus creating a major roadblock in any analysis of these schemes. Any documentation regarding these projects, in form of DPRs, is seldom open to public. Another major problem is in the approach of these projects as these are envisaged as purely infrastructure-related engineering projects only. There is no guiding approach which results in exclusion of gendered needs in these projects. Thus, engendering them would be possible by ensuring gendered sensitivity among the decision making authorities who propose and finalise these projects.

[18] See Chapter 5, Section 5.1.9 for detailed discussion.
[19] See Chapter 5, Section 5.4.3 for detailed discussion.

5. GRB Analysis of Selected Urban Development Services: Evidence from Bhopal and Pune

Provision of basic urban services – water, sanitation, housing and public transportation – is vital for survival in an urban environment. Urban infrastructure appears to be gender neutral, but has different implications for men and women. Before a budget analysis is taken up for any city, it is incumbent to analyse the institutional structure for provision of various services within it before assessing their coverage status and financial allocations. The city governments are not always providing the basic services and more often, both, state-level departments/ parastatals and local government, provide these services, sometimes in different combinations. This chapter introduces the status of basic services, details out the financial allocations across these services, and assesses performance of these services using primary data of both case study cities – Bhopal and Pune.

5.1. Bhopal: City Profile

Bhopal, the capital city of Madhya Pradesh, is also well-known by the sobriquet of 'the city of lakes'.[20] Although it is the state capital, it is the second largest city in the state,[21] having a population of around 14.5 lakhs in 2001, which increased to around 18 lakhs in 2011. The annual exponential population growth rate of the city is 2.12 per cent during 2001-11, a decline from 3.22 per cent per annum (p.a.) in the previous decade (Table 5.1). The city has registered lower population growth rate than all India urbanization rate of 2.82 per cent p.a. during 2001-11. Table 5.1 also shows that the city's population growth rate has declined over time since 1961, primarily on account of high growth rate observed in the early decades after the formation of the state. The rehabilitation of migrant population, establishment of state capital in Bhopal in 1956, Capital Project Township in 1959 and T.T. Nagar along with setting up of Bharat Heavy Electricals Limited (BHEL) Industrial Township at the outskirts of the city led to high population growth of 8.10 per cent p.a. in 1951-61, followed by 5.6 per cent p.a. growth in the next two decades till 1981. The population growth rate has more or less stabilized thereafter.

Table 5.1: Population Growth of Bhopal

Year	Population	Annual Exponential Growth Rate (%)
1951	102,333	3.12
1961	222,948	8.10
1971	384,859	5.61
1981	671,018	5.72
1991	1,062,771	4.71
2001	1,458,416	3.22
2011	1,798,218	2.12

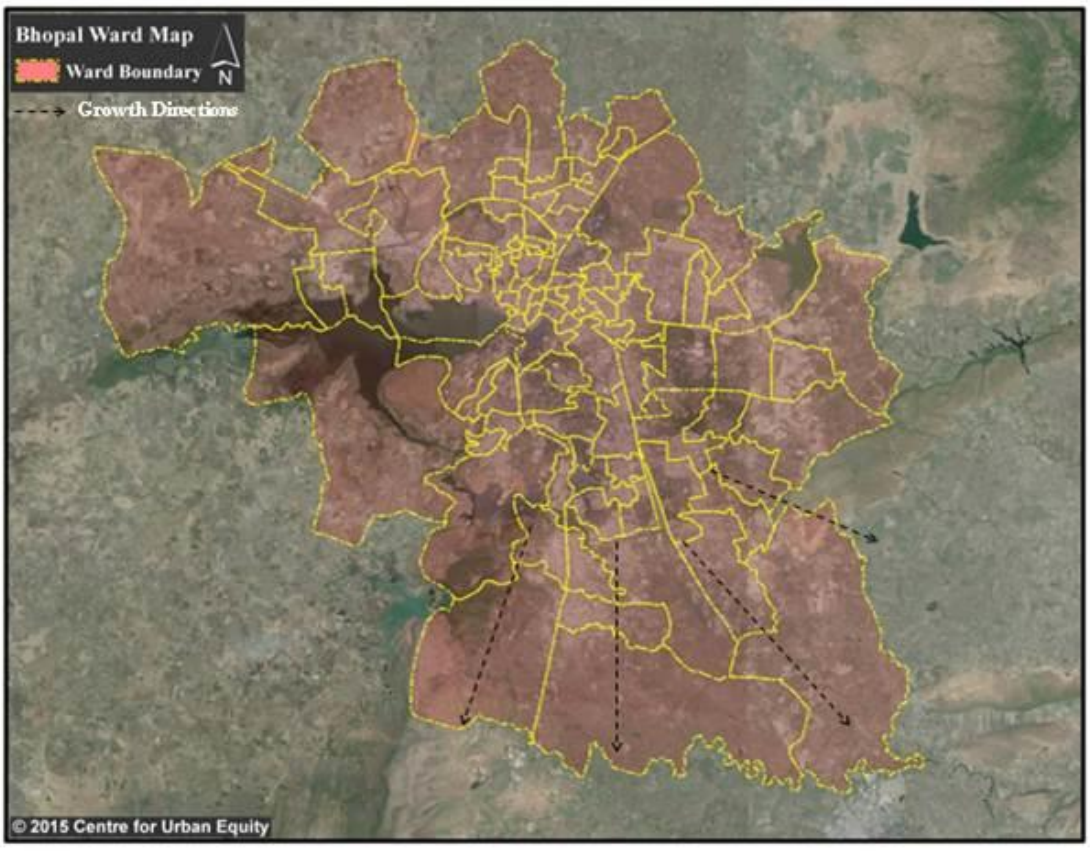
Source: Census, 2011.

[20] There are around 18 lakes in and around the city.

[21] Indore, the commercial capital is the largest city in the state with a population of 1,964,086 in 2011.

Besides being the administrative capital and housing many state and central government organizations, the city is also an educational hub with reputed national institutions and a regional centre for trade and commerce due to its strategic location in the state. Over the years, the city has grown not as one entity but as a set of five discrete townships namely, Old City (historic core), BHEL Township & M.P. Nagar (the industrial areas), Capital Project (T.T. Nagar, etc., with government offices), Bairagarh and New Outgrowth (on Raisen, Hoshangabad and Kolar Road). The city has grown mostly in the south and south-east directions due to the availability of land and presence of a transport node (Figure 5.1). Limited development has been realized in the northern and western directions owing to the undulating terrain and huge expanse of the Upper Lake. The city's area expanded from 71.2 square kilometres (sq. kms) in 1975 to 285.88 sq. kms in 1999 to 485.56 sq. kms with inclusion of Kolar municipality and 20 villages in 2014 (GoMP 2014a). Now, the Bhopal Municipal Corporation (BMC) consists of 19 zones and 85 wards (GoMP 2014b). The new developments are on the ring road, wherein lands for academic institutions have been given. The new airport is also accessed from this ring road.

Figure 5.1: Growth of Bhopal



Source: Prepared by Centre for Urban Equity.

5.1.1. Population Density

The city's gross population density[22] of 63 persons per hectare (ppha) is very low. If 38 sq. kms of the lake area is deducted, the net density still remains low at 73 ppha. While the city is a mix of hilly and flat terrain, it is characterized by sparse low-rise development with large areas of green spaces and hills. In fact, the city is so sparsely sprawled in comparison to the other cities of the state in India, that there are vast patches of uninhabited lands in the city, making provision of public transport a real problem.

5.1.2. Sex Ratio

The sex ratio of the city has improved over the last decade from 898 in Census 2001 to 921 in 2011. Bhopal's overall sex ratio was higher than Madhya Pradesh's urban sex ratio of 918 in 2011. This indicates that there is some level of population stabilization in the city. However, the juvenile sex ratio (of age 0-6 years) was 919 in 2011, which is a decline from 937 in 2001. Economic growth resulting in sex selection of the foetus seems to be a trend catching up in Bhopal as well like at all India level. Workforce participation rate[23] in Bhopal is 35 per cent, lower than the national average of 39 per cent. Of the total workforce, only 23 per cent are women. Their workforce participation rate is as low as 16 per cent, against the national average of 25.6 per cent.[24]

5.1.3. Land Use

The city is characterized by a pattern of mixed land use with residential use occupying more than half of the total planning area (59 per cent) (Table 5.2), followed by public and semi-public (16 per cent) and recreational zones (11 per cent), while industries occupy just a three per cent, and commercial zones occupy less than two per cent of land. This indicates that this is largely a city with tertiary sector economy dominating. Indeed, this is a state capital and hence has large proportion of land swathes occupied by the government buildings. Also, as mentioned earlier, it is also emerging as an educational city and hence large swathes of land, in the city and now in the periphery are occupied by educational institutions. Although a development plan has been prepared, poor implementation and enforcement result in problems of informal settlements. The new development plan of the city is still under process.

---

22 For calculating gross and net population density, figures of population and area are taken from Census 2011. Net residential density is population divided by net area under residential use (gross area under residential use minus area under internal roads and open spaces in a residential locality).

23 As per Census definition, Workforce participation rate is defined as the percentage of total workers (main and marginal) to total population. Calculated as (Total workers/ Total population)*100

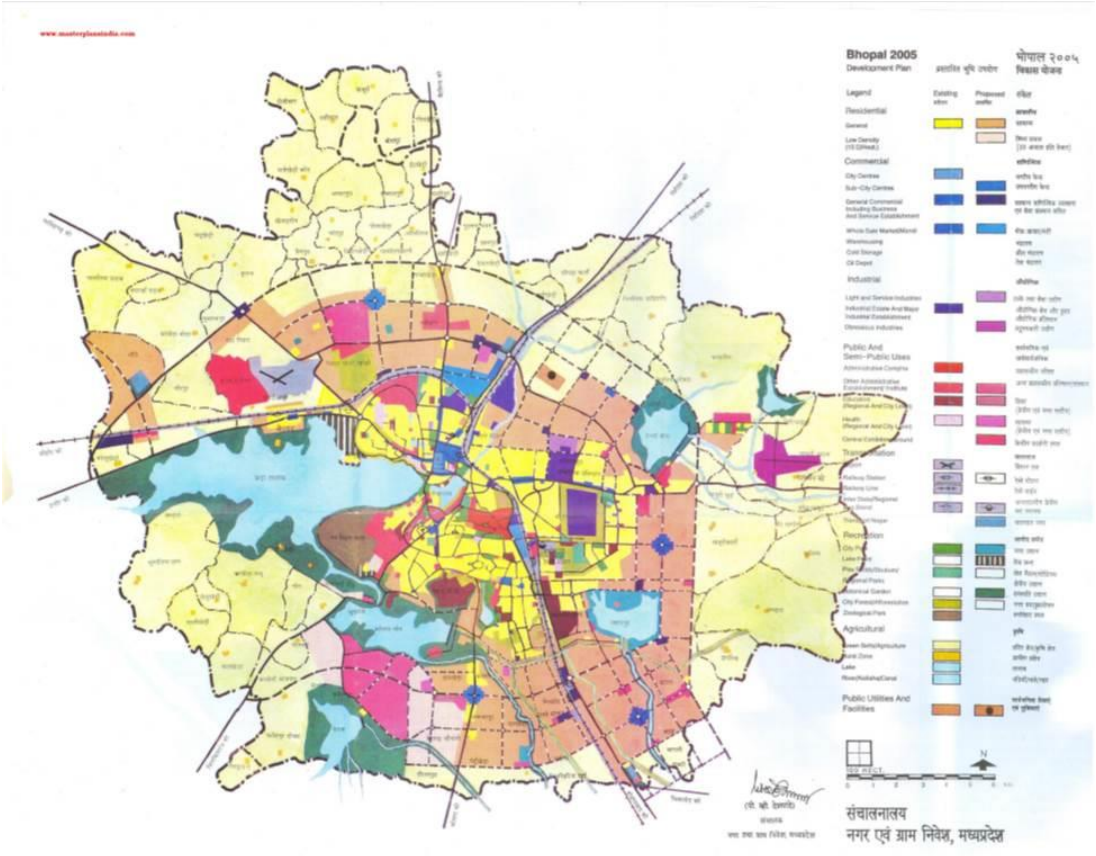
24 http://censusindia.gov.in/Census_Data_2001/India_at_glance/workpart.aspx, Accessed on November 16, 2015.

Table 5.2: Land Use Distribution

Land Use	Existing Land Use (As per 2005)	
	Area in ha.	Per cent
Residential	101,69.42	58.94
Commercial	365.73	2.12
Industrial	574.65	3.33
Public and Semi-Public	2,831.34	16.41
Public Utilities, Facilities	134.84	0.78
Transportation	1,198.14	6.94
Recreational*	1,980.86	11.48
Total	**17,254.98**	**100**

* High percentage is due to the extensive catchment area of lakes.
Source: GoMP, 2005.

Figure 5.2: Bhopal Development Plan, 2005: Land Use Map



Source: GoMP, 2005.

5.1.4. Slums in Bhopal

The official figures of slum populations are available from Census 1981 onwards. The slum population of the city increased staggeringly from 1981 to 1991 with a decadal increase of 857 per cent or an annual growth rate of 25.3 per cent. The Census 2001 recorded that the slum population in the city was 125,720, which was 8.7 per cent of the total population of Bhopal (Table 5.3). However, in comparison to the 1991 Census data, this figure appeared to be highly under-reported (Mahadevia and Datey 2015). In 2000, another survey conducted by a team of consultants advising on the SNP for Bhopal, estimated 468,606 persons – 32.6 per cent of the total population, living in 266 settlements. This list included slums from the Urban Welfare

Department list[25] and the BMC slums. Additionally, under the Slum Environment Sanitation Initiative (SESI) programme,[26] the state received a grant from UN-Habitat and WaterAid for building a slum-level basic services database titled *Poverty Mapping: A Situation Analysis of Poverty Pockets in Bhopal* (UN-Habitat 2006) - concluded that there were 380 slum pockets in Bhopal housing 9.6 lakh population. In recent years, varied figures about the slum settlements have been released. While the Census 2011 recorded slum population of 479,669 (around 26.7 per cent of the total population; the Slum Free City Plan of Action (SFCPoA) of Bhopal city in 2013 covered around 366 notified slum settlements having a population of 478,641 (MHUPA 2013). A recent survey conducted by the BMC in 2015, after expansion of the city limits, recorded 384 slums with population of 496,705 – which is 27.6 per cent of the total population of the city. Table 5.3 also shows that except the last two decades, the slum population growth rate was higher than the overall population growth rate. We can interpret that in the last two decades migration of the low-income population to Bhopal city has abated. Some might argue that due to slum development programmes, which Bhopal has seen many relatively successfully implemented (Mahadevia and Datey 2015). However, that is not the case, as Mahadevia and Datey (2015) show that the slums improved or upgraded under the earlier programmes were not denotified, that is, removed from the list of the slums and hence were once again covered for housing under the BSUP housing under JNNURM.

Table 5.3: Growth of slums in Bhopal

Year	Total population	% growth of total population (% p.a.)	No. of slums	No. of households in slums	Population in slums	% growth of slum population (% p.a.)	% Slum population (of A)
1971	384,859	5.61			19,050	-	4.95
1981	671,018	5.72			41,763	8.17	6.22
1991	1,062,771	4.71			399,662	25.34	37.61
2001	1,458,416	3.22	*266		*468,606	1.60	32.60
2011	1,798,218	2.12	376	102,803	479,669	0.23	26.70

* Census 2001 figures for slum population were much under-reported; therefore figures from (Himanshu Parikh *Consulting Engineers & Youth for Unity and Voluntary Action* (YUVA) 2001) have been substituted.
Source: Census, 2011.

5.1.5. Water Supply

The water supply in the city is operated and managed by the Public Health Engineering Department (PHED), Government of Madhya Pradesh (GoMP) as well as the BMC. Currently, majority of the drinking water supply of Bhopal city is supplied by three surface water sources, namely, the Narmada river (about 185 MLD), the Kolar reservoir (about 155 MLD) and the Upper Lake (about 118 MLD). The city has around 10 water treatment plants. The operation and maintenance of these plants along with the distribution system is undertaken by the BMC along with the engineering staff of the PHED.

[25] The list used for providing leasehold titles under the Patta Act.
[26] Besides Bhopal, the programme also covered the city of Indore.

Besides these sources, ground water is also used as a supplementary source through tube-wells, hand pumps and a few large diameter dug wells. There are an unaccounted number of privately owned dug wells and bore wells which has led to exploitation of ground water. Areas like Hoshangabad road, Kolar road, Raisen road, Airport road and other colonies located on the outer fringe of the city depend on groundwater. Water is supplied by the BMC through tankers in extended areas where the water supply distribution network has not kept pace with the expansion of the city limits, as well as in areas having low water supply pressure. At present, the duration and periodicity of water supply varies zone-wise. As per the BMC, around 90 litres per capita per day (lpcd) is supplied through this method.

Table 5.4: Water Supply in Bhopal City

Indicators	Benchmark	Existing Level
Coverage of Population to piped water supply*	100%	67%
Per Capita Supply of Water*	135 lpcd	90 lpcd
Continuity of Water supplied*	24 hours	2-3 hrs in a day
Quality of Water Supplied	100%	90%
Cost Recovery	100%	23.5%

Source: *BMC, MoUD (2012).

Various projects for augmenting water supply in the city have been undertaken through national programmes and through funding from externally-aided agencies. Under JNNURM, other projects such as extending water supply to gas affected areas, water supply distribution network of Bhopal municipal area and Narmada water supply project have been undertaken.[27] While the water supply component of project UDAY[28] (also known as Urban Water Supply and Environmental Improvement Project (UWSEIP)), primarily funded by ADB includes laying of distribution and transmission network, construction of OHSRs, rehabilitation of pumping stations and WTPs and repair of existing lines etc. Under the Area Improvement Fund (AIF)/ Community Initiative Fund (CIF) component of the project, infrastructure up-gradation and social activities were undertaken in around 15 selected slum settlements in Bhopal.

[27] While the first two projects have been implemented by the BMC, the implementation of the Narmada water supply project has been done by the PHED, GoMP.

[28] The project is being implemented by the state government – through the Project Management Unit (PMU) under the Urban Administration and Development Department, (UADD) - with financial support from ADB, in four major cities – Bhopal, Indore, Gwalior and Jabalpur. The project consists of (i) improvement of urban infrastructure and services (water supply, waste water, sanitation, solid waste management, storm water sector) and strengthen the capacities of the local authorities in resource mobilization and cost recovery; and (ii) as part of the AIF/ CIF of the project, up-gradation of physical infrastructure (including community managed water supply, community toilets, individual household toilets, etc.) and different social activities (including capacity building and awareness generation of slum dwellers, vocational/ livelihood trainings, health camps, education support etc.).

5.1.6. Sewerage

Bhopal does not have a full-fledged city-wide sewerage system owing to its topographical condition, which is hilly. Most of the sewage is discharged into open drains, which flow into the water courses – Upper Lake or the Patra/ Halali/ Betwa rivers – thereby polluting them. At present, the city has around 466 kms of sewerage infrastructure network in three main catchment areas, consisting of the 130 kms laid under the project UDAY funded by the ADB, 86 kms laid under the Bhoj wetland project[29] and 250 kms laid in the Capital Project Administration (CPA) zone which primarily covers the old areas of the city. The ADB-funded project UDAY included laying a sewer network to prevent pollution of Upper Lake, augmentation of the existing sewer network, and new sewer network in areas of the old city. It also included construction of sewage pumping stations and a STP. Since the city is not served by a gravity sewer network, septic tanks, soak pits or open drains are the common system for sewage disposal. There are eight STPs, based on oxidation treatment method, working with the capacity of 74 MLD in the city.

Table 5.5: Sewerage Conditions

Indicators	Benchmark	Existing Level
Coverage of Sewerage Network	100%	10.4%
Quality of Sewage Treatment	100%	65 %
Extent of Reuse and Recycling of Sewage	20%	2.8%
Extent of cost recovery in waste water management	100%	7%

Source: MoUD (2012).

5.1.7. Solid Waste Management (SWM)

Bhopal has a fairly structured waste collection and transportation system. The Health and Sanitation department of the BMC is primarily responsible for delivering solid waste management services and is headed by the Health Officer. The total waste generated in the city is estimated to be about 802 metric tonnes per day (MT/day). Municipal solid waste, as per source of generation, can be broadly divided into the following categories:

- Domestic waste from residential and slum areas primarily consists of food waste, paper, plastics, glass, metal, rags and other packaging materials. According to the BMC, the present generation of domestic waste is estimated to be 593 MT/day – around 74 per cent of daily waste is generated from residential areas.
- Institutional waste which consists of waste from the (i) commercial establishments (including business houses, banks, media houses, retail stores, showrooms, hotels, restaurants etc.); (ii) vegetable/ fruit/ meat markets; (iii) slaughter houses – there are three major slaughter houses in the city, the largest

[29] In view of the ecological importance of the Upper and Lower lakes, the Ministry of Environment & Forests (MoEF) has recognized both lakes of national importance and designated them as Bhoj Wetland. In 2002, it was declared a Ramsar site. With financial assistance from Japan Bank for International Corporation, an integrated plan for conservation and management of the lakes was conceived and implemented during 1995-2004.

having the capacity of 80-100 large animals (bovines); and (iv) institutional areas – besides several colleges and educational institutes, the city, being the administrative capital, also houses government organizations and department. It also includes waste generated from sweeping streets and cleaning drains. The total waste generated from all above mentioned institutions is estimated 192 MT/day

- Bio-medical waste generated from medical establishments is estimated to be 8 MT/day. Most of the collected bio-medical waste is separated and sent for treatment to the Bhopal Incinerator Limited, a Central Pollution Control Board (CPCB) authorized bio-medical waste treatment facility in Govindpura Industrial Area; only Hamidia government hospital has its own incinerator. Around 318 hospitals and nursing homes are operating within the municipal limits of the city (TheHitavada 2015).
- Industrial waste generated from industrials units comprises of hazardous toxic substances. The major industrial areas (engineering, textile and pharmaceutical units) in Bhopal are located in BHEL, Govindpura areas while service industries are found in areas of old city, new market and M.P. Nagar. The total waste is estimated around 10 MT/day.

Collection

As per the Municipal Solid Waste (Management and Handling) Rules, 2000, the municipal authorities are required to organize door-to-door collection of waste. BMC carries door-to-door collection of waste in all wards of the city by engaging rag pickers. Around 60 per cent of the households in the city are covered under door-to-door collection. However, at present there is no segregation of waste. Many NGOs are involved in providing training to rag pickers for efficient collection of waste. The non-recyclable polythene waste collected by the rag pickers is sold to the cement manufacturing units. At present, about 2-3 tons of waste is collected daily. Containers/ community bins have also been provided at various points of the city for collection of waste. In addition, street sweeping is carried out in two shifts on all days except on Sundays and public holidays. However, open dumping and burning of waste is rampant in the city.

Processing and disposal

At present, there no waste processing technologies are available in the city. The collected waste is dumped at Bhanpura Khanti dumpsite in an unscientific manner. This dumpsite, now proximal to the urban developed areas of the city, has been in operation for the past 30 years. Also, BMC has started operating the bio-fertilizer plant (set up by M.P. State Agro Development Corporation) of 100 MT/day, adjoining Bhanpura site. BMC has initiated closure of Bhanpur site and is in final stages of setting up of a new integrated waste management facility at Adampur Chavani. The new site would also service other urban areas such as Ashta, Berasia, Ichhawar, Kolar, Kothri, Mandideep, Obedullaganj and Sehore, in addition to Bhopal.

Table 5.6: Solid Waste Management

Indicators	Benchmark (%)	Existing Level
Household level coverage of solid waste management services	100	25 %
Efficiency of collection of municipal solid waste	100	80 %
Extent of segregation of municipal solid waste	100	12 %
Extent of municipal solid waste recovered	80	15 %
Extent of scientific disposal of municipal solid waste	100	0 %
Extent of cost recovery of solid waste management services	100	7 %
Efficiency in collection of solid waste management charges	90	82 %
Efficiency in redressal of consumer complaints	80	99%

Source: MoUD (2012).

5.1.8. Storm Water Drainage

The terrain and physiography of Bhopal is advantageous for natural drainage of the storm water in the city. In old parts of the city, storm water flows from number of small channels running across the city into *Patra nallahs*, which gets discharged into the Halali river. The central parts of the city discharge storm water run-off into the Upper and Lower lakes. Though there is no severity of inundation, many roads in the city lack storm water drains.

Table 5.7: Storm Water Drainage

Indicators	Benchmark	Existing Level
Coverage	100%	50%
Incidence of water logging	0	0

Source: MoUD (2012).

5.1.9. Housing

Madhya Pradesh has proactively implemented a number of housing programmes, especially for slum development, from the Patta Act of 1984 to implementing the BSUP schemes. The state was the first to create a state-wide legislation for providing land tenure to slum households, called the Patta Act of 1984.[30] Besides granting land tenure security, the Patta Act also commanded the ULB to extend basic services to all *patta*-slum settlements. The state also has an active Housing Board, the Madhya Pradesh Housing and Infrastructure Development Board (MPHIDB), which has constructed 169,008 DUs and developed 153,698 plots since its inception in 1973.[31] Besides, the Bhopal Development Authority (BDA) is also involved in implementation of BSUP and affordable housing schemes for economically weaker sections (EWS)/ lower-income group (LIG)/ middle-income group (MIG)/ higher-income group (HIG) sections.

[30] The legislation is called *Madhya Pradesh Nagariya Kshetron Ke Bhoomihin Vyakti (Pattadhruti Adhikaron Ka Pradan Kiya Jana) Adhiniyam, 1984* which translates into "The Act for 'Providing Tenure Rights' to Landless Persons of the Urban Madhya Pradesh, 1984". It is called as the Patta Act of 1984 in different literature as '*Patta*' means the land tenure right.

[31] Details are available on the website of the MPHIDB at http://www.mphousing.in/achievements.asp accessed on August 5, 2015.

The state released first of its kind 'State Population Policy'[32] in the year 2000 for improving family welfare programmes and State Housing and Habitat Policy (SHHP) in the year 2007.[33] The SHHP acknowledged the increase in urban population of Madhya Pradesh was six times in last half century, due to in-migration, which led to an increase in population residing in slums (GoMP, 2008). Besides reservation of 30 per cent of land for LIG/ EWS in town planning schemes, provisions of lowering stamp duties for LIG/ EWS beneficiaries under Valmiki Ambedkar Awas Yojana (VAMBAY), BSUP and IHSDP.

This was followed by infrastructure up-gradation programmes in the slums that were given *patta*. The Madhya Pradesh Urban Services for Poor (MPUSP),[34] a state-wide programme for providing basic services to the slum cities, was a five-year programme (2006-2011) funded by a grant from DFID, United Kingdom (UK). Implemented across four major cities - Bhopal, Indore, Jabalpur and Gwalior – the programme aimed to reduce the proportion of poor without access to safe drinking water and sanitation and leading to infant mortality reduction. Besides covering only 12 per cent of slums (around 21 slums) in the city, another drawback of the programme was that only slums situated on state government land were eligible for selection;[35] thereby benefiting the slums which already had *patta* provision and were anyways eligible to receive city level services (Mahadevia and Datey 2015). Additionally, under the SESI programme, improvement of basic services infrastructure was covered in few settlements. Also under the BSUP component of JNNURM, around 13,399 DUs were sanctioned to be constructed, out of which 12,427 DUs have been constructed and 2,785 DUs have been occupied as of August 2015 in Bhopal.[36] Around 15 shelter homes (*rein baseras*) are being run by the BMC in the city for the homeless.

---

[32] The state population policy was released in the year 2000. The full text is available on http://dit.mp.gov.in/documents/10180/08bee5d4-a917-468a-a21d-d976bad5034a, accessed on August 5, 2015.

[33] In 2007, the state released the housing policy for Madhya Pradesh called as *'Avas evam Paryavas Neeti 2007'* on the lines of the *National Urban Housing and Habitat Policy 2007*. The text in hindi is available on http://mphed.nic.in/Housing%20Policy%20Oct-2007-Final.pdf accessed on August 5, 2015.

[34] Later labeled as Project Utthan. The successful impact of MPUSP has led to another two-year programme (2013-2015) – Madhya Pradesh Urban Infrastructure Investment Programme (MPUIIP) between DFID, UK and GoMP which aims to provide better facilitation and operationalization of private sector investment in urban basic services, improved transparency and accountability of ULB functioning especially for women, greater financial security from land for poor people and clean and more efficient urban basic services. Its' 'Safe Cities Initiative' component, first of its own kind, aims at reducing violence against women (VAW) in private and public sphere and create an evidence base of effective strategies to prevent and address VAW at community level. Out of 250 slums to be covered under this component across the four cities of the state (as in MPUSP) in collaboration with the municipal corporations, around 63 slums of Bhopal have been covered.

[35] Slums were prioritized based on 3X3 matrix prepared on the basis of the Poverty Pockets Situation Analysis (PPSA) survey data of the SESI.

[36] MHUPA keeps state-wise monthly data for sanctioned housing units under BSUP and IHSDP at http://jnnurmmis.nic.in/jnnurm_hupa/index.html

Table 5.8: Housing Provision under Different Programmes

Parameter/ Programme	MPUSP	SESI	BSUP
% of HHs covered	8	5	NA
% of slums covered	12	4	NA
% of HHs covered by permanent *patta*	NA	NA	29.7
% of slums covered by BSUP	NA	NA	10

Note: NA means not applicable.
Source: Compiled from Mahadevia and Datey (2015).

As per the Census 2011, the total population and number of households is 1,798,218 and 382,690 respectively. The methodology for calculating the housing shortage for BMC has been adapted from report of the Technical Group On Urban Housing Shortage (TG-12) (2012-17) that considers the following factors: i) Excess of households over housing stock; ii) number of households residing in unacceptable dwelling units (DUs) (obsolescent factor); iii) number of households residing in unacceptable physical and social conditions (congestion factor); and iv) the number of houseless households (MHUPA 2012). For the purpose of estimating obsolescent housing stock, the obsolescent factor calculated from 12th Five Year Plan (Obsolescent Houses/ Total Households i.e: 2.27 Mn/ 81.35 Mn = .027904) is multiplied by the number of households in BMC. The following calculation shows that the estimated shortage of Housing in Bhopal for year 2011 is 43,205 units (See Table 5.10 for details).

Table 5.9: Population and Households in Bhopal

Census 2011	Population	Total HHs (including houseless HH)	Average HH size	Houseless Population*	Houseless HH*
Bhopal	1,798,218	382,690	4.7	7,933	2,733

*From Household Series (available at http://www.censusindia.gov.in/2011census/hh-series/hh02.html), Census 2011.
Source: Census, 2011.

Table 5.10: Housing Shortage Calculations

S.No.	Housing Shortage	Bhopal (2011)
1	Households (including houseless HH)*	382,690
2	Acceptable Housing stock*	371,722
	Good	249,252
	Liveable	112,916
	Dilapidated	9,554
3	Excess of Households over housing stock	10,968
4	Congestion in households (Annexure 1)	12,004
5	Obsolescence factor**	10,679
6	Up-gradation of dilapidated houses	9,554
7	Total Housing shortage= (3+4+5+6)***	43,205

* Figures for households and acceptable housing stock are from Census 2011.
**Obsolescent Houses/ Total Households i.e: 2.27 Mn/ 81.35 Mn = .027904 (12th Five Year Plan)
*** Bhopal SFCPoA has calculated the housing shortage to be 0.98 lakhs based on the following assumptions (i) the number of households is 4.36 lakhs; and (ii) household size is 5.1.
Source: Census, 2011.

5.1.10. Public Transportation

Like any other city in India, the public transport system in Bhopal also consists of both formal and informal modes. The formal mode includes the recently implemented BRTS,[37] and the four trunk and eight standard bus services which are monitored by a SPV – BCLL, having BMC and BDA as stakeholders. However, both bus services are run by two private bus operators on net-cost basis,[38] i.e. besides paying upfront fees for the buses, the private operators are responsible for operation and maintenance of the entire fleet and assets and have to pay royalty costs and share advertisement revenue with BCLL. While the informal mode consists of mini-buses and Tata magic vehicles – both run by private operators and auto-rickshaws. As per statistics published by the Ministry of Road Transport and Highways (MoRTH), the city has around 828,569 registered motor-vehicles as on 31st March 2012, of which 79 per cent are two-wheelers (MoRTH 2013).

Table 5.11: Details of Modal Share in Bhopal

Type	Mode of Transport	No. of Buses	Average Daily Ridership	Percentage of Modal Spilt	Route Length (in Kms)
Formal	Red bus*	221	100,000	32	341.66
Informal	Mini bus	339	95,000	30	NA#
Informal	Tata Magic	436	120,000	38	NA#

Note: (i) The above table does not include details regarding the auto-rickshaws;
(ii) * Including both BRTS and city bus service;
(iii) NA# - Not available since both services are run by private operators.
Source: BCLL and EMBARQ, 2015.

A recent study by EMBARQ on women's safety in public transport revealed that in spite of their unreliability, over-crowdedness etc.; informal modes, i.e. mini-buses and Tata Magic service, are preferred over the formal mode by the users, especially by the lower-income groups, owing to their cheaper fares in comparison to the BCLL buses (EMBARQ 2015).[39]

5.2. Pune: City Profile

Pune is the second largest city in the state of Maharashtra. Historically, the city was an important military centre under the British rule. Post-independence, it has emerged as an industrial centre, educational hub as well as the cultural capital of Maharashtra (Mashal 2010). Besides, the city is also an important market, place of trade for agricultural produce, cluster for food processing industry, information technology and biotechnology hub. It has also witnessed tremendous growth in the construction

[37] Launched in 2013, Bhopal city has an open BRT system, which means that the buses can move in and out of the dedicated bus corridor as per their route requirements. This makes integration of the city bus service with the BRTS easier, reduces the need for transfers and feeder buses which is desirable for short distance trips.

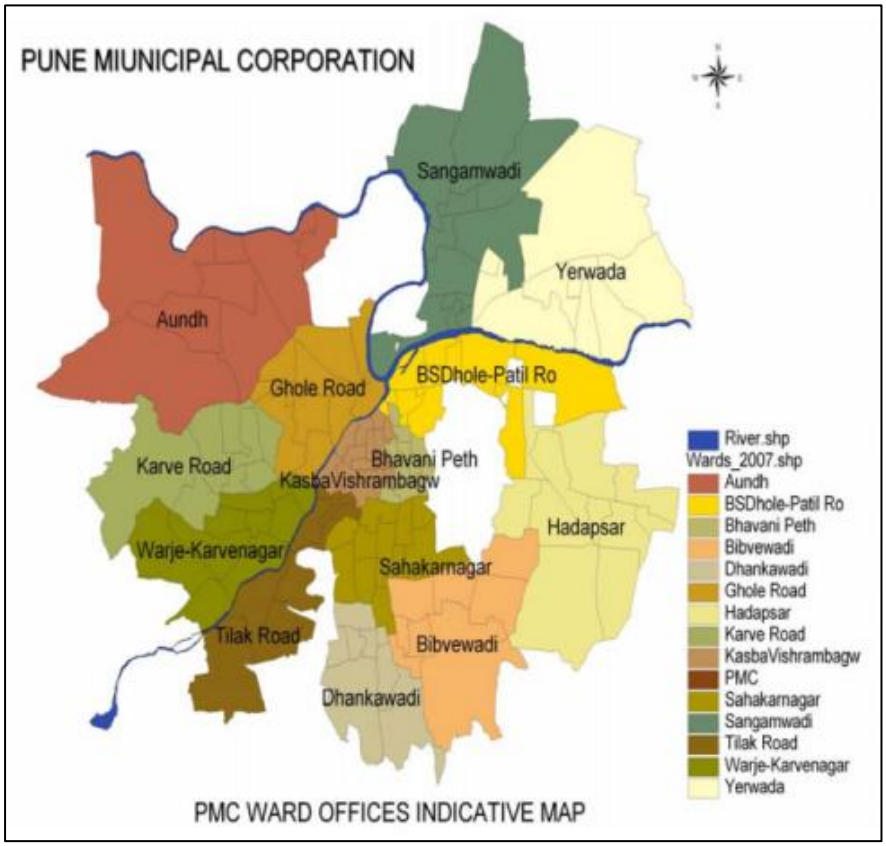
[38] It is the only city in India wherein the BRTS is operating on a net-cost basis; whereas in other cities, the system is being run on a gross-cost basis.

[39] While fares of the mini-buses are regulated by the transport department of the state government, fare structure of Tata Magic service is decided informally by its operators which are usually lower in comparison to the mini-buses and BCLL service in order to attract more passengers.

industry. Pune comes under the Delhi Mumbai Industrial Corridor (DMIC) project influence area. Many large industrial units are found around the limits of PMC within its metropolitan region.[40]

Formed on February 15, 1950, under the Bombay Provincial Municipal Corporations (BPMC) Act 1949, the PMC is responsible for providing basic services and managing planned development within the city. According to the CDP, 2012, the area of PMC has increased from 138.36 sq. kms (in 1987) to 243.84 sq. kms with addition of 23 villages in 1997. The city is divided into four zones, 15 administrative wards and 76 electoral wards. According to Census 2011, the population of Pune is 3,124,458. The city has experience slowing down of population growth rate during 2001-11 decade at 2.10 per cent p.a. from 4.94 per cent p.a. in 1991-2001 decade (Table 5.12). The high population growth rate in the 1990s is partly explained by expansion of the city limits. Nonetheless, the city limits had to be expanded due to development outside the city's periphery. In particular, Hingewadi and Magarpatta, two areas on the city's periphery developed as information technology hubs resulting in city sprawl and need to expand the city's boundary creating an increased demand for urban transport.

Figure 5.3: Jurisdiction of PMC



Source: PMC, 2011.

[40] According to the Comprehensive Mobility Plan (CMP), 2008, the Pune Metropolitan region, spread over an area of 1,340 sq. kms, consists of (i) Pune Municipal Corporation (PMC); (ii) Pune Cantonment Board (PCB); (iii) Pimpri-Chinchwad Municipal Corporation (PCMC); (iv) Khadki Cantonment Board (KCB); and (iv) close to 100 other census towns and villages.

Table 5.12: Decadal Population Growth of Pune

Year	Population	Annual exponential Growth Rate (%)	Area (sq. kms)	Density (ppha)
1951	488,419	-	125.00	39
1961	606,777	2.19	125.00	49
1971	856,105	3.50	138.00	62
1981	1,203,351	3.46	146.00	82
1991	1,566,651	2.67	146.00	107
2001	2,538,473	4.94	243.84	104
2011	3,124,458	2.10	243.84	128

Source: Census, 2011.

5.2.1. Population Density

The population density for PMC in 2001 was 104 ppha which has grown to 128 ppha in 2011. The population density is found to be high in the old city and along major transport corridors in comparison to other parts of the city. But, on the whole, the density is low and is an indication of city sprawl. The figures in Table 5.12 are gross densities and not gross residential density. About half the city's land area is under residential use (Table 5.13) and by that the gross residential density of the city is 256 ppha, which is also low.

5.2.2. Sex Ratio

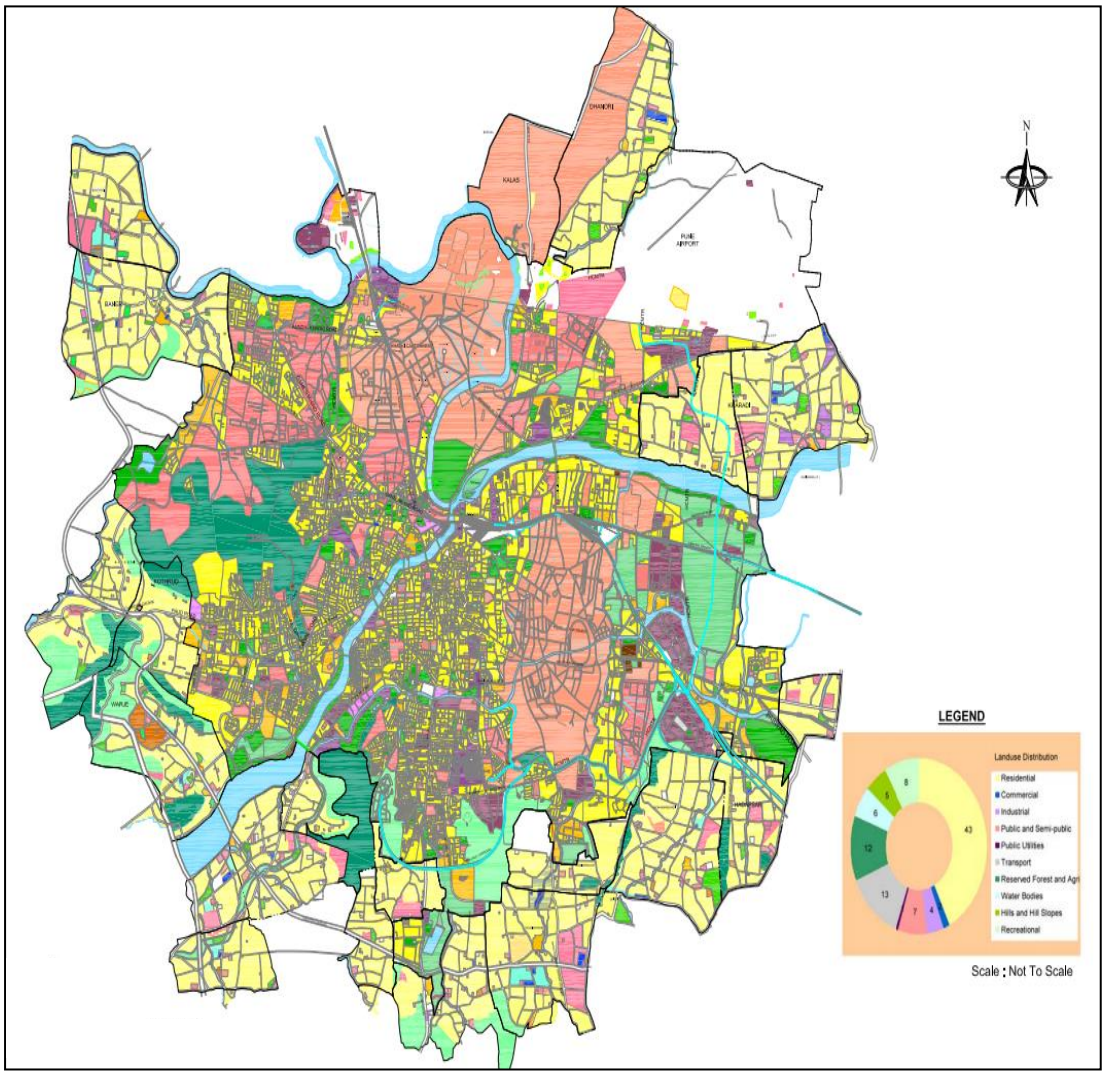
According to the Census 2011, the sex ratio of the city is 948 per 1,000 males, which has improved over the last decade from 921 in 2001. Pune's overall sex ratio was higher than Maharashtra's sex ratio of 929 as well as the national average of 940 in 2011. Similarly, the juvenile sex ratio (of age 0-6 years) in 2011 is 908, which is also higher in comparison to the state juvenile sex ratio of 894.[41] Thus, the city fares better in sex ratio as compared to the state of Maharashtra. In terms of workforce participation rate for the city, 39 per cent of working age population is part of the labour force. Of the total female population, 21 per cent is employed/ actively looking for employment, as against 25.6 per cent national average. Thus, the city is not far behind as compared to the national average.

5.2.3. Land-Use

The CMP, 2008 suggests that the future growth of the PMC would be mainly governed by existing transport corridors, existing and future industrial developments in and around PMC and the expansion of central business district (CBD). At present, the city appears to be growing in the south-east and south-west directions. The city is predominantly mixed land use, an urban form that benefits women as they are able to find work in proximity to their residence, enabling them to take up paid work.

[41] Census 2011.

Figure 5.4: Pune Development Plan



Source: PMC, 2008.

Table 5.13: Land Use Distribution

Land Use	% Distribution (as per 1987 DP)	% Distribution (as per 2001 DP)
Residential	36.56	50.35
Commercial	1.70	1.49
Industrial	5.25	2.48
Public and semi-public	11.00	1.37
Public Utilities	1.00	-
Transport	15.90	9.29
Reserved forests and agriculture	1.70	25.29
Water bodies	8.70	2.35
Hills and Hill slopes	9.00	-
Recreational	9.20	7.38
Total	**100**	**100**

Source: PMC, 2012.

5.2.4. Slums in Pune

With population growth of the city, its slum population has also increased. According to the study conducted by Mashal in 2008, the population within the old PMC limit was 2,138,243 in 2007, of which 40 per cent lived in slums. The average household

size observed was 4.74 with most of the households (40 per cent) had six or more members living in it (Mashal 2010). The 2011 slum population estimate by the census looks like under-reporting or denotification of former slums that may have been redeveloped.

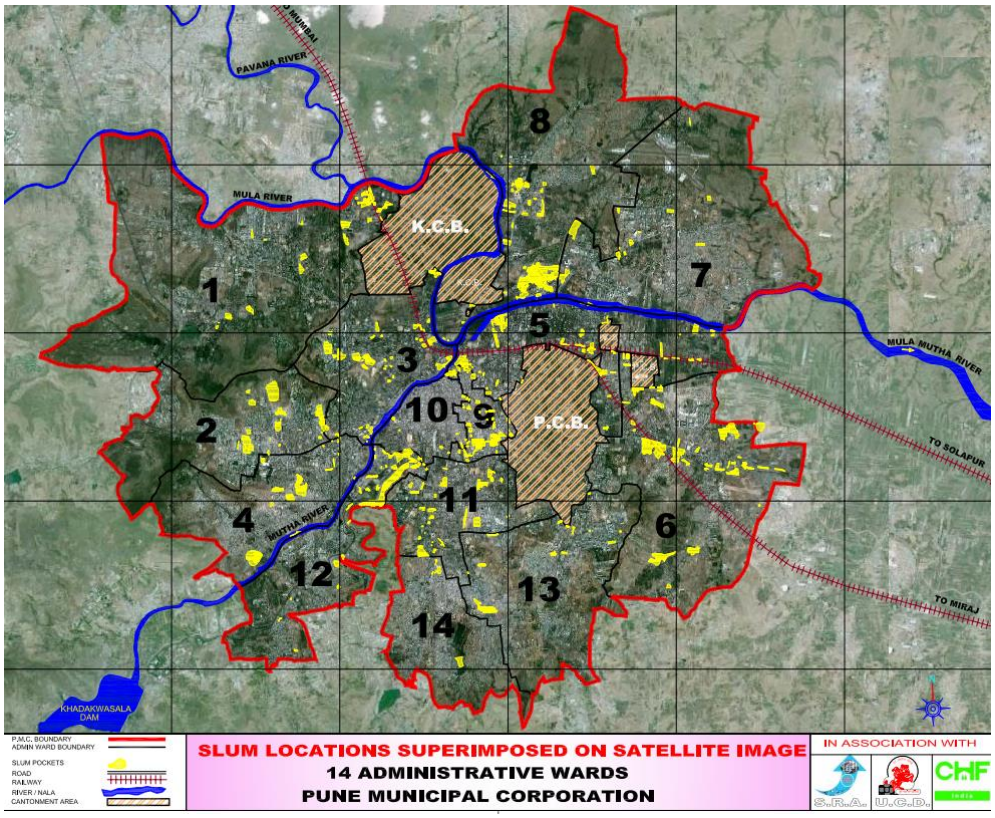
Table 5.14: Slum population in Pune

Year	Total population	Slum population	Slum population as % of total	Annual exponential growth rate of slum population
1951	481,000	38,500*	8.00	
1961	606,777	92,101*	15.18	9.11
1971	856,105	239,701*	28.00	10.04
1981	1,203,363	377,000*	31.33	4.63
1991	1,566,651	569,000*	36.32	4.20
2001	2,538,473	1,025,000*	40.38	6.06
2011	3,124,458	690,545**	22.10	-3.87

Source: * Mashal, 2010, ** Census, 2011.

Much of the increase in slum population was observed in 1966-67 and 1972-73 due migration of population from the rural parts of the state which were experiencing severe drought conditions. In 2008, a study conducted by Mashal reported that about 40.38 per cent of the population resided in slum settlements (against the total population of 38,243 residing in the old PMC limit in 2007). These settlements were spread over 10 per cent of the land (as of 2009), thus had a density as high as 1,100 ppha, which is much higher than the overall gross residential density in the city.

Figure 5.5: Slum Map of PMC



Source: Mashal, 2011.

In the last decade, the growth rate of slum population was higher than the overall city population growth. As per Census 2011, there are 358 slums in the city with a population of 635,220 or 22.10 per cent of the total city population.[42] Various other studies conducted in the city have reported different figures. According to the CDP in 2012, the slum population, now, is approximately 40 per cent of the population. While the CSP,2011 reports that 564 slums are present in the city, of which 353 i.e. 64 per cent, are declared[43] slums and another 211, i.e. 36 per cent are undeclared[44] slums housing 11.89 lakhs persons (30 per cent of the city population). According to the *Pune Slum Atlas* prepared by Mashal (2011), there are about 477 slums in the city. Many of these slums are located on environmentally sensitive areas and disaster prone areas. Slums are spread all over the city, and in that sense, the current city morphology is inclusive of the poor, as they have found habitation all through the city. As mentioned above in the context of the mixed land use, spread of slums throughout the city also benefits women of the slum households as they would be able to find work in their neighbourhood.

5.2.5. Water Supply

The water supply in the city, including its procurement, treatment, transportation and distribution, is catered by the water and sanitation department of PMC. The existing water supply is 1,123 MLD. The main sources of water for Pune are (i) Mula, Mutha and Pravna rivers; (ii) Khadakwasla, Panshet, Warasgaon, Temghar dams; (iii) Pashan and Katraj lakes; (iv) 399 dug wells; and (v) 4,820 bore wells (PMC 2012). The PMC is equipped to supply 1,318 MLD of treated water from 9 WTPs and ground water abstraction from 399 dug wells and 4,820 bore wells (PMC 2012). There are 58 storage reservoirs in the city with a total capacity of 463 million litres (ML) – that is 41 per cent of the total water supply (higher than the normative standard of 33 per cent, about 374 ML). The water supply in Pune has been divided into 48 zones (recent development in 2012). The water supply capacity of the WTPs is adequate, and does not require any new treatment plants or any enhancement of the existing plants except for the refurbishment of Parvati WTP and Cantonment WTP which are more than 40 years and 120 years old, respectively (PMC 2012).

The per capita availability of water is 194 lpcd. However, the distribution is not; it varies from 138 lpcd to 238 lpcd. Water is supplied twice a day, but the continuity of supply ranges from 2-20 hrs per day. The problem of inadequate water supply is due to the topography in the southern parts of the city. Despite water being supplied to the elevated areas through mechanical pumping, its supply continues to be less, varying

[42] http://www.census2011.co.in/census/city/375-pune.html accessed on September 3, 2015.

[43] Under Maharashtra Slum improvement and clearance act 1971, a slum is loosely defined as a congested, unhygienic area or buildings that are public hazards. As under the provisions of this act PMC declares a number of areas as slums according to the given definition. Declared sums are officially recognized by the government and are eligible to receive basic services.

[44] Undeclared slums are those which are not recognized by PMC (under Maharashtra Slum improvement and clearance act 1971) and are not eligible to receive any basic services.

from 4-6 hours per day. In areas where water is distributed through gravity, the continuous water supply availability is for as much as 20 hours per day.

The total coverage of water connections in the city is 94.19 per cent; around 5.81 per cent of the city remains uncovered, mostly the newly developed fringe areas and undeclared slums (PMC 2012). The uncovered population includes 2.68 per cent households from the declared slums, 2.43 per cent households from undeclared slums while the remaining 0.69 per cent are served through tankers (PMC 2011).

Water metering currently cover 29.71 per cent of the city only, which includes mostly commercial connections. The transmission losses are about 25-30 per cent, thus resulting in lower pressure. Water charges for domestic use have been introduced from 2000 onwards which are linked to the type of property and property tax for all non-metered connections. Thus, collection efficiency of the PMC has risen to 90.93 per cent from 2000 onwards. However, only 70 per cent of the costs are recovered.

Table 5.15: Water Supply in Pune

Indicators	Benchmark	Existing Level
Coverage of Population to piped water supply	100%	94%
Per Capita Supply of Water	135 lpcd	194 lpcd
Continuity of Water supplied (hrs of supply)	24 hours	6 hrs in a day
Quality of Water Supplied	100%	100%
Cost Recovery	100%	70.67%

Source: PMC, 2012.

5.2.6. Sanitation

PMC is responsible for the management of the sewerage system, collection, transportation, treatment and disposal of sewage. The sewerage system was first laid in the city in 1915. The total main sewerage length is currently 1,260.6 kms which covers 97 per cent of the city. The city is divided into 17 sewage districts, which are different from administrative wards. The total sewerage generated in the city is about 744 MLD (PMC 2011). The city has nine STPs with a total capacity of 527 MLD. Around 29 per cent of sewerage is untreated (PMC 2011).

Table 5.16: Existing sewerage system in Pune

Parameter	Benchmark	Current capacity
Total sewage generation (MLD)	-	744
Sewerage network coverage (%)	100	97.6
No. of STP and pumping stations	-	9
Collection efficiency of sewerage network (%)	100	73.35
Coverage of toilets (%)	-	97.36
Percentage of recycle and reuse of water (%)	20	7
No. of community toilets	-	466
No. of pay and use toilets		770
Cost recovery (%)	100	100
Revenue Collection efficiency (%)	90	68.81

Source: PMC, 2012.

Around 80.02 per cent of households have individual toilet facilities, 20.72 per cent utilize community pay-and-use toilets and 2.63 per cent households do not have access to toilet facilities within walkable distance.[45] It is estimated that around 103 open defecation spots are being used approximately by 8,500 to 9,000 people on a daily basis, in spite of the fact that the PMC has constructed 414 public/ community toilet blocks during 1999-2000 (PMC 2011).

5.2.7. Solid Waste Management

PMC is responsible for collection, scientific segregation, transportation, processing and disposal of waste generated within its jurisdiction. It is also responsible for estimation and analysis of waste, waste minimization, public awareness and enforcement and resource management.

Table 5.17: Service level benchmarking for SWM

Performance Indicator	Benchmark (%)	2010 status (%)
Household level coverage of solid waste management services	100	52.70
Efficiency of collection of municipal solid waste	100	100.00
Extent of segregation of municipal solid waste	100	27.96
Extent of municipal solid waste recovered	80	85.00
Extent of scientific disposal of municipal solid waste	100	100
Extent of cost recovery of solid waste management services	100	60.88
Efficiency in collection of solid waste management charges	90	67.00
Efficiency in redressal of consumer complaints	80	84.74

Source: PMC, 2012.

The quantity of waste generated ranges from 1,300 to 1,400 MT/day calculated to 400-450 grams per capita per day, based on population figures of Census, 2011.The municipal waste is broadly characterized as dry waste and wet waste. The *Strategic Action Plan Report for Integrated Solid Waste Management Plan, Pune* (Modak 2007) states that approximately 60-65 per cent waste is wet waste, 10-15 per cent dry waste and 10 per cent is other type of waste.

The waste collection efficiency is 100 per cent; wherein 52 per cent of households are covered door-to-door and rest of the waste is collected from community bins and containers. A registered society of rag pickers, Solid Waste (Collection and Handling) Cooperative (SWACH), is an initiative of PMC involved in door-to-door collection since 2008 onwards. With a total strength of 5,500 members,[46] the organization covers approximately 300,000 households (i.e. 52 per cent households) from all 14 administrative wards. In order to enforce segregation of SWM at household-level, the PMC has directed all residents to segregate wet and dry wastes into white and green buckets. Approximately, 50 per cent of the waste is being segregated at the source. This practice varies across different wards.

[45] According to the CSP, 2011, total number of households in the city are 916,846. Out of which 733,668 have individual toilet facilities; 190,040 households utilize community pay-and-use toilets and 24,153 households do not have accesses to toilets within walking distance (PMC 2011).

[46] Out of these, 1,963 members are involved in door-to-door collection of waste.

The transportation of waste is done through Bulk Refuse Carriers (BRC), compactors, dumper placers, *ghanta gaadi* and hotel trucks. There are seven garbage collection centres, 412 compactor buckets and 936 containers placed in various parts of the city. The average spacing of dustbins is 500 metres. PMC has deployed 90 *ghanta gaadi* which collects about 95,000 kg/day of wet waste every day (door-to-door collection) and 23 hotel trucks (for collection of waste from 1,349 hotels) for collection of waste. At present, the collected MSW is disposed-off at an abandoned stone quarry of around 163 acres at Urali Devachi, which is located 20 kms away from the city.

PMC has provided bio-medical waste disposal facility through a private company named M/s Pasco Environmental Solutions Pvt. Ltd. Bio-medical waste in the city is collected by eight bio-medical waste collection vans and disposed through incinerators. This facility serves 550 nursing homes, 141 pathology laboratories, 11 blood banks and 1,048 clinics. It also covers an area 10 kms away from PMC limit. The PMC had embarked on the plan to become totally sanitized in 2008 (PMC 2011); as part of which, city sanitation task force was created, a CSP was prepared and stakeholders mobilized. The PMC had implemented two successful models namely Garbage Free Katraj model & electricity generation through wet waste generated in hotels in Kothrud Area. In 2010, PMC developed the Hanjer Bio-tech plant having a capacity of 1000 tonnes per day (TDP) located at Urali Devachi. Apart from that, there are 12 bio-gas plants and three composting plants. Construction of a 700 TPD capacity waste to energy plant is in progress. It is expected that the plant will generate electricity of 10 MW per hour.

5.2.8. Storm Water Drainage

PMC is responsible for the construction and maintenance of drains in the city. Natural *nallahs* and their tributaries present in all 23 basins, which forms primary drainage channel for the city. A total of 228 *nallahs* are running over a length of 382,633 metres as drainage channel. Four rivers flow through the city with a total length of 53.92 kms.

Table 5.18: Service level benchmarking for Storm Water Drainage

Performance Indicator	Benchmark	Current status
Coverage (%)	100	55
Indicator of water logging	0	52

Source: PMC, 2012.

The drainage system network in the municipal area has limited coverage, with closed road-side drain network available for selected and major roads. The existing percentage of road drainage network is only 52 per cent (PMC 2012). Due to uncontrolled development of slums near *nallahs*, these drainage channels have become vulnerable to deposition of wastes of all kinds, mainly wastewater and solid waste.

5.2.9. Housing

With increase in the city's population, its demand for housing has also increased. While, demand of high-income groups is met by private builders, housing for the low-income group remains insufficient and thus has resulted into growth of slums in the city (Mashal 2010). Around 60 per cent of the households are living in permanent or *pucca* housing units, while 14 per cent are semi-*katcha* and 26 per cent are *katcha*.

Wadas, the traditional residential buildings, some as old as 100 years, are part of Pune's rich cultural heritage. These structures come under the Rent Control Act, 1947. Thus, tenants living in the *wadas* for more than 25 years are required to pay the original rent amount.[47] With rapid development of information and technology sector, the city has witnessed a boom in the real estate market, thereby leading to a sharp increase in rent prices. This has also resulted into shifting of population from old city areas into new apartment complexes promoted by builders in areas like Kharadi, Magarpatta and Kalyani Nagar, on the city's peripheries, where the information and technology parks are located.

While on one hand, the city has severe shortage of affordable housing,[48] which affects 50 per cent of city's current population (Mashal 2010);[49] on the other hand, the city is experiencing a high vacancy rate of approximately 10 per cent. Almost, as much as national level vacancy rate in housing at 10.73 per cent (MHUPA 2012).

Table 5.19: Population and Households in Pune

Census 2011	Population	Total HHs (including houseless HH)	Average HH size	Houseless Population*	Houseless HH*
Pune	3,124,458	733,990	4.3	3340	1066

*From Household Series (available at http://www.censusindia.gov.in/2011census/hh-series/hh02.html),Census 2011.
Source: Census, 2011.

As per the Census 2011, the total population and number of households is 3,124,458 and 733,990, respectively. The methodology for calculating the housing shortage for PMC has been adapted from report of the TG-12 that considers the following factors: i) Excess of households over housing stock; ii) number of households residing in unacceptable DUs (obsolescent factor); iii) number of households residing in unacceptable physical and social conditions (congestion factor); and iv) the number of houseless households. For the purpose of estimating obsolescent housing stock, the obsolescent factor calculated from 12th Five Year Plan (Obsolescent Houses/ Total Households i.e: 2.27 Mn/ 81.35 Mn = .027904) is multiplied by the number of

47 Ranging between INR 20 - 25.
48 The affordable housing deficit is in the range of 2.5 to 3 lakhs and is expected to double in the next 15 years, with growth of the city and the metro region.
49 According to the report, 44.14 per cent of population is under EWS category, 20.03 per cent in LIG, 26.25 per cent in MIG and 9.58 per cent in HIG.

households in PMC. The following calculation shows that the estimated shortage of housing in Pune for year 2011 is 75,917 units.

Table 5.20: Housing Shortage Calculations

S.No.	Housing Shortage	Pune Municipal Corporation (PMC)
1	Households (including houseless HH)*	733,990
2	Acceptable Housing stock*	733,990
	Good	557,485
	Liveable	166,946
	Dilapidated	9,559
3	Excess of Households over housing stock	0
4	Congestion in households (Annexure 6)	45877
5	Obsolescence factor**	20,481
6	Up-gradation of dilapidated houses	9,559
7	Total Housing shortage= (3+4+5+6)	75,917

* Figures for households and acceptable housing stock are from Census 2011.
**Obsolescent Houses/ Total Households i.e: 2.27 Mn/ 81.35 Mn = .027904 (12th Five Year Plan)
Source: Census, 2011.

5.2.10. Public Transportation

Cycle

Pune was historically known as 'the cycle city of India' due to its high cycle ridership. In 1981, a Bicycle Master Plan was prepared, however its implementation was not successful (EMBARQ 2014). In recent years, ownership of motorized two-wheelers has risen. On most of the roads, there is no segregation for cycle traffic from motorized traffic (PMC 2008). According to CMP 2008, about 11 per cent of total trips in the city are made by cycles.

The 2011 Parisar's detailed study of the cycle tracks in the city found that while it was claimed on paper that around 132 kms of cycle tracks existed on 20 roads; only 87.5 kms of tracks were found on existing on 12 roads.[50] Most of this infrastructure was not used by cyclists owing to their poor design, implementation and maintenance. The survey took account of obstructions, lighting, shade, intersections, adjacent footpaths and encroachments. Pune has also built cycle tracks along it BRTS corridors, which were identified as being some of the better cycle tracks built in the city. But on the whole, the study concluded that the cycle tracks are very badly designed and had a large number of obstructions, missing portions and unconnected sections, and unused cycle tracks which were thus prone to encroachments.

Parisar also conducted a study on women cyclists from low-income groups. The sample size of the study was 20 women within the age-group of 30-40. Most of the respondents used cycles to commute to work, while other uses included to bring children back from school and buy groceries for home, i.e. limited to nearby places. Not all of trips made by them in the city were on cycles only; autos and buses were

[50] According to this survey, Law College Road and Old Canal Road are among the best cycle tracks; while Vishrantwadi-Airport Road and Solapur Road are the worst amongst them.

frequently used. Many complained about problems of physical fatigue, back aches and leg aches due to cycling for long time or on uneven roads. The major advantages of using cycles were ability to save time and money. None of them used the cycle tracks. In most cases, where tracks were present, they were unusable.

Road Network

The road network in the city follows a radial and rectilinear pattern covering around 1,922 kms. Congestion is a major problem on the roads of the city. With increase in motor vehicles and congestion, number of road accidents have increased in the last decade. As of 2010, 417 people died in road accidents in Pune (PMC 2012).

The city has a low share of public transport and a higher share of private transport. Vehicular traffic has increased by 10 per cent annually over the years (PMC 2012). Various reports indicated that around 1.35-2 lakhs vehicles are added every year. Since 1960's, the city's population has grown four times whereas the vehicular population has increased 87 times. According to EMBARQ study in 2014, Pune has a high vehicle ownership pattern of 450 vehicles per 1,000 population. In 2011, 23 lakhs vehicles were registered with the Regional Transport Office (RTO), a jump from 12 lakhs in 2005. About 12,000-15,000 new vehicles are registered monthly (EMBARQ 2014).

Two wheelers are the major mode of transport. Motorcycles, scooters and mopeds constitute 73 per cent of motorized vehicles (PMC 2008). Data from RTO, in the Embarq study, clearly shows that the share of two wheelers and cars has increased whereas the share of three-wheelers and buses has reduced. The average ownership was 1.5 two-wheelers per household (EMBARQ 2014).

Table 5.21: Composition of registered vehicles in Pune, 2005 and 2011

Year	% of Two-wheelers	% of Cars	% of Three-wheelers	% of Buses
2005	75	13	6	0.8
2011	77	19	3	0.5

Source: EMBARQ, 2014.

Public Transport Bus Service

The public city bus service is run by the Pune Mahanagar Parivahan Mahamandal Ltd. (PMPML), which has been recently formed by combining Pune Municipal Transport (PMT) operating buses within the PMC limits and Bus Corporation of Pimpri-Chinchwad in PCMC limits (PMC 2008). The PMPML has an operational fleet of 1,745 buses including 327 buses hired from private operators (PMC 2012). The current bus fleet is 25 buses per lakh population. There has been a 20 per cent decrease in ridership since 2010-11 due to increase in daily breakdowns, cancelled schedules, crowding, cleanliness and affordability (EMBARQ 2014). Various studies indicate that the present PMPML fleet is plagued with over-age buses resulting in inefficiency in operation and economic loss. As per PMPML records, the daily ridership is 12.3 lakhs.

Besides this, the city also has local train connections to Lonavala and Talegaon. There are 17 pairs of trains between Pune and Lonavala and three pair of trains' upto Talegaon. Recently, there have been demand to increase frequency and capacity of the trains due to considerable increase in the number of commuters (PMC 2012).

BRTS

Under JNNURM, around INR 1,051 crores have been sanctioned to build 115.67 kms of BRTS, which consists of four packages - Pilot (17 kms), Phase I (48.77 kms), CYG (36 kms) and Alandi road (13.9 kms) (PMC 2008). Pune was the first city in India, wherein pilot BRTS on Swargate-Katraj-Hadpsar route was implemented in 2006. The project consisted of 16.5 kms of bus lanes along the Pune Satara Road, using more than 500 air-conditioned, low-floor Volvo buses. The BRTS system in Pune is a mix of dedicated and non-dedicated BRT lanes, depending upon the availability of right of way. Apart from pilot project, approximately 101 kms additional BRTS network was sanctioned under JNNURM for Pune metropolitan region.

Table 5.22: Details of sanctioned projects under JNNURM as of 2012

Project	Revised sanctioned cost (in INR Cr.)	Status
Pilot BRT	103.14	Completed
CYG BRT	434.22	82.55%
BRTS Phase I	476.62	95.5%
Nagar road Subway	6.61	88.45%
Baner road subway	7.26	Completed
Sangamwadi approach road	7.82	Completed
New Alandi road	37.03	64.93%
Total	**1072.7**	

Source: PMC, 2012.

Metro

Pune metro has been proposed for which DMRC has been given the task of preparing the DPR. This has generated much discussion among citizens and officials regarding route finalization. The most recent announcement by the Maharashtra Chief Minister was to it being a mix of over-head and underground construction (Economic Times 2015).

Footpaths

According to Pune Walkability Survey by Parisar (2010), 37 per cent of trips were made by walking. The survey ranked Pune on the Global Walkability Index on nine aspects of walkability. The city scored 54/100, overall with highest score on street safety/ security of crime due to lively street activities of hawkers and pedestrians. It also claimed that wherever footpaths were available, they were not walkable and crossing junctions was difficult.

5.3. Financial Allocations across Selected Sub-sectors

After looking into the provision of basic services – i.e. water, sanitation, housing, and transport, their coverage, implementing agencies, this section provides an overview of budget statements, sector-wise trends in allocations and expenditures incurred. It is to be noted that only the payments/ expenditure accounts (revenue and capital) of various involved agencies have been taken into consideration.

5.3.1. Overview of BMC Budget for 2015-16

It is observed that, overall, the revenue-side of the BMC budget remains in deficit primarily due to increased revenue expenditures (establishment, administrative expenses etc.) being incurred by the BMC in comparison to the revenue receipts being collected by the BMC. On the capital-side, the budget is in surplus clearly indicating that there are unutilized funds (primarily consisting of grants through central/ state government) lying with the ULB, at present. Summing up both revenue and capital sides of the budget, BMC has remained in deficit which has been increasing over these three years.

Table 5.23: Snapshot of BMC budget for 2015-16

	Total (in INR Cr.)				Per Capita (in INR)#			
	Actual (2013-14)	**Financial Allocation (2014-15)**	**Revised Allocation (2014-15)**	**Financial Allocation (2015-16)**	**Actual Expenditure (2013-14)**	**Financial Allocation (2014-15)**	**Revised Allocation (2014-15)**	**Financial Allocation (2015-16)**
Total revenue income	472.01	758.04	681.98	1,051.96	2,497.89	3,913.28	3,520.65	5,297.61
Total capital income	576.03	1,249.89	586.23	1,648.98	3,048.32	6,452.41	3,026.33	8,304.20
Total budget size	**1,048.04**	**2,007.92**	**1,268.21**	**2,700.94**	**5,546.21**	**10,365.69**	**6,546.98**	**13,601.81**
Total revenue expenditure	536.28	929.81	812.41	1,228.86	2,838.01	4,800.04	4,193.96	6,188.50
Total capital expenditure	509.16	1,134.89	591.26	1,516.74	2,694.46	5,858.73	3,052.33	7,638.24
Total expenditure	1,045.44	2,064.70	1,403.67	2,745.60	5,532.46	10,658.77	7,246.29	13,826.74
Net Surplus/ deficit*	-21.00	-94.68	-169.56	-361.74	-111.14	-488.75	-875.34	-1,821.73

Notes: *calculated as summation of surplus/deficit of both revenue and capital accounts. It is to be noted that the revenue surplus/ deficit additionally includes 5 per cent of total revenue income which is to be reserved by the ULB.

Calculated by dividing the actual expenditure (2013-14), financial and revised allocation (2014-15) and financial allocation (2015-16) with the population of the respective years. Using the population growth rate of 2001-11, population projections for the respective three years have been calculated which are as follows (i) For 2013-14 projected population is 1,889,644; (ii) For 2014-15 projected calculation is 1,937,086; and (iii) For 2015-16 projected population is 1,985,718.

Source: BMC Budget documents of 2015-16.

Looking at the overall budgetary allocations across the four selected sub-sectors for the recent two years, a sharp increase is observed in expenditures under public transportation and sanitation in comparison to the water supply and housing sectors. This is primarily due to increased funding from the central government under

JNNURM (especially for public transport), UIDSSMT (for sanitation) etc., and state government.

5.3.2. Overview of PMC Budget for 2015-16

The current PMC budget is INR 4,479.50 crores, with revenue expenditure of INR 2,240 crores and capital expenditure of INR 2,239.5 crores, with INR 22,558.54 budget per capita (See Table 5.24 below for per capita calculations). As per budget analysis conducted by Janwani (2015), the share of water department in total budget is around 16 per cent, road improvement department 15 per cent, sanitation and solid waste management 8 per cent, education 8 per cent, public health 4 per cent, and slum improvement 2 per cent.[51] The maximum share of revenue expenditure is on general administration, water and sewerage services and public education. Under capital expenditure, public works and civic amenities function consist of a major share of total expenditure. Most of it is incurred in development of roads in the city. The second major share is allocated to planning and regulation function, which is approximately 27 per cent of the total capital expenditure (Janwani 2015).

Table 5.24: Snapshot of PMC Budget for 2015-16

	Total (in INR Cr.)			Per capita (in INR)#		
	Actual Expenditure (2013-14)	Financial Allocation (2014-15)	Financial Allocation (2015-16)	Actual Expenditure (2013-14)	Financial Allocation (2014-15)	Financial Allocation (2015-16)
Total revenue income	2,717.07	3,702.26	3,980.53	14,378.74	19,112.52	20,045.80
Total capital income	265.07	447.73	498.96	1,402.75	2,311.36	2,512.74
Total budget size	**2,982.14**	**4,149.99**	**4,479.49**	**15,781.49**	**21,423.88**	**22,558.54**
Total revenue expenditure	1,759.50	1,901.24	2,240.00	9,311.28	9,814.95	11,280.55
Total capital expenditure	1,407.54	2,248.77	2,239.54	7,448.70	11,609.04	11,278.24
Total expenditure	3,167.06	4,150.03	4,479.52	16,760.09	21,424.09	22,558.69
Net Surplus/ deficit*	-49.0465	185.093	198.9765	-259.55	955.52	1,002.04

Notes: *calculated as summation of surplus/deficit of both revenue and capital accounts. It is to be noted that the revenue surplus/ deficit additionally includes 5 per cent of total revenue income which is to be reserved by the ULB.

These are obtained by dividing the actual expenditure (2013-14), financial allocation (2014-15) and allocation (2015-16) with the population of respective years. Using the population growth rate of 2001-11, population projections for the respective three years have been calculated which are as follows (i) For 2013-14 projected population is 3,198,248; (ii) For 2014-15 projected calculation is 3,272,077; and (iii) For 2015-16 projected population is 3,347,610, respectively.

Source: Adapted from PMC Budget, 2015-16.

'L' Budget

PMC also makes provision for women and child welfare, which are accounted separately in its 'L' budget. The proposed budget includes following activities - construction of toilets for women, crèche for children of working women, financial

[51] Janwani Budget Analysis 2015-16.

grants to self-employed women, outlay for women's day celebrations, schemes for young for enhancing their careers, and grants to PMC school board. Per capita 'L' budget expenditure on women is INR 594 for the year 2015-16.

Table 5.25: Components of 'L' budget, PMC (figure in INR Cr.)

Heads	Actual Expenditure (2013-14)	Actual Expenditure (2014-15)	Estimated Allocation (2015-16)
Revenue expenditure	156.79	145.31	76.9
Capital expenditure	3.61	5.52	4.59
Fund expenditure	17.64	15.01	15.24
Total	**178.04**	**165.84**	**96.73**
Per capita expenditure[52] (in INR)	**1,143.89**	**1,041.47**	**593.75**

Source: Janwani, 2014, PMC budget 2015-16 and 2014-15.

As per the resolution issued by the GoM, 5 per cent of PMC's expenditure is reserved for works and programmes of the Women and Child Welfare committee. Accordingly, provision for this head in 2015-16 has to be INR 68.23 crores. But, higher amount of INR 96.77 crores have been provided for the same. A simple analysis of the current year's budget reveals that about INR 21.59 crores and INR 21.93 crores have been spent on children[53] and women,[54] respectively. For remaining amount, the classification of beneficiaries is not clear and could include both children and women.[55] The expenditures on women include implementation of Swarna Jayanti Shahari Rozgar Yojana (SJSRY), organizing treatment camp for aged women, construction of ladies toilets in PMC office and buildings, salaries of PMC workers, pensions, grants to women's self-help groups, training centres, skill development centres, etc. However, none of these expenditures are budgeted as capital expenditure, majority of them are included in fund expenditure. Further, from Table 5.25, it is evident that the fall in current expenditure as compared to previous year is primarily due to fall in the revenue expenditure (due to dissolution of the primary board) wherein a major chunk was contributed by the education department. However, this year, 55 per cent of share in expenditure in the 'L' budget (including employees' salaries) has been allotted to PMPML (Janwani 2015).

5.4. Performance Assessment of selected sub-sectors from Gender Lens

As mentioned in Chapter 2, since investments made by the city government/ parastatal agencies do not directly translate into the benefits men and women receive,

[52] Per capita expenditure for 'L' budget has been calculated using population of women for the three respective years. Using the population growth rate of 2001-11, population projections for the respective three years and sex ratio for 2011, population of women has been calculated as follows (i) for 2013-14 projected female population is 1,556,437; (ii) for 2014-15 projected female population is 1,592,366; and (iii) for 2015-16 projected female population is 1,629,124.

[53] Where beneficiaries are only children; this includes expenditure on primary and secondary education.

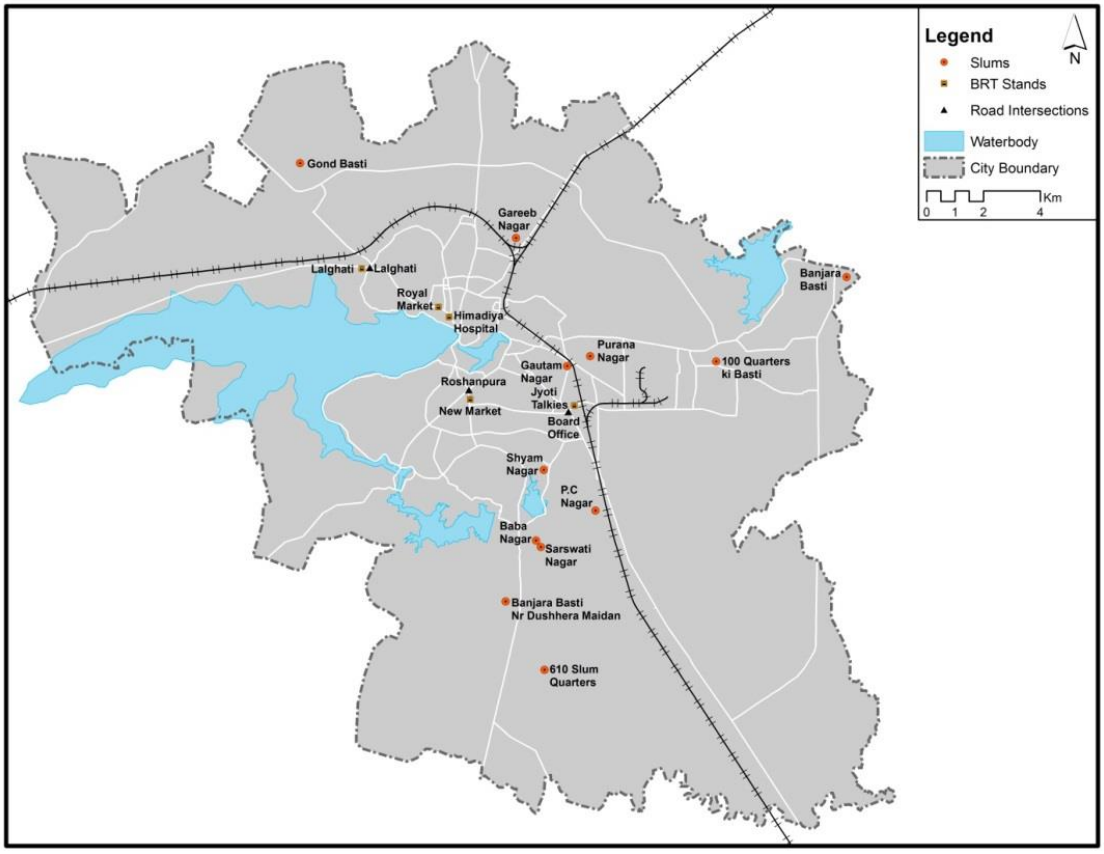
[54] This includes expenditure for which only women are beneficiaries.

[55] This is among one of the major critiques of the GRB statement format as followed by the government of India. Many of the expenditures in the list are general expenditures such as expenditure on hospital like Dr. Naidu Hospital Project for which 50 per cent of funds have been included in the 'L' budget, on the assumption that 50 per cent of beneficiaries are women and children.

the next step would be to assess the performance of various initiatives in each of these sub-sectors from the perspective of women. In order to assess these selected indicators and parameters (as discussed in Chapter 2: Methodology), both secondary and primary data collections methods have been used here.

The status of selected sub-sectors in both cities has been discussed in depth in Section 5.1 and 5.2 of this chapter. Also, for the selected indicators and parameters wherein information is unavailable through secondary data sources, the following primary data collection tools – FGDs/ rapid assessment at settlement-level of low-income groups for water supply, sanitation and housing sub-sectors, gender traffic counts for public transportation and observation for road infrastructure have been used.

Figure 5.6: Location of slum settlements surveyed, road intersections and BRTS stands, Bhopal



Source: Prepared by Centre for Urban Equity.

In Bhopal, the sample size for conducting FGDs/ rapid assessment at settlement-level was 3 per cent of the slums present in the city (around 12 settlements). The sample settlements were selected on the following criteria - (i) ownership of land (on which the slum settlement is located) – State government/ private/ BHEL; (ii) location of slum such as in gas-affected areas of the city; (iii) least/ minimal intervention have been undertaken till now – with extension of BMC boundaries, many slums have been come under the jurisdiction of the ULB; and (iv) settlements wherein communities of

rag-pickers/ tribes (*adivasis*) are living. Besides these, it was attempted that these settlements would be geographically spread across the city. Based on these criteria, 12 settlements were selected, wherein FGDs/ rapid assessments at settlement-level were conducted (See Figure 5.6 for location of slums and Annexure 2 for details of the same). However, in three settlements (Banjara Basti, P.C.Nagar and Gondh Basti), conducting FGDs with males was not feasible. In Gautam Nagar, a combined FGD with both males and females was conducted.[56]

For public transportation, (i) three major road intersections in the city were selected for conducting gender traffic counts; and (ii) five BRTS stands having highest ridership, as suggested by BCLL, were selected for conducting gender passenger counts at these stands (See Figure 5.6 for location of the intersections and BRT stands) during peak timings in morning, afternoon and evening respectively. Through these counts, per cent of female passengers using roads and BRTS have been computed (See Annexure 4 and 5 for details) which would be used further in BIA for this sub-sector.

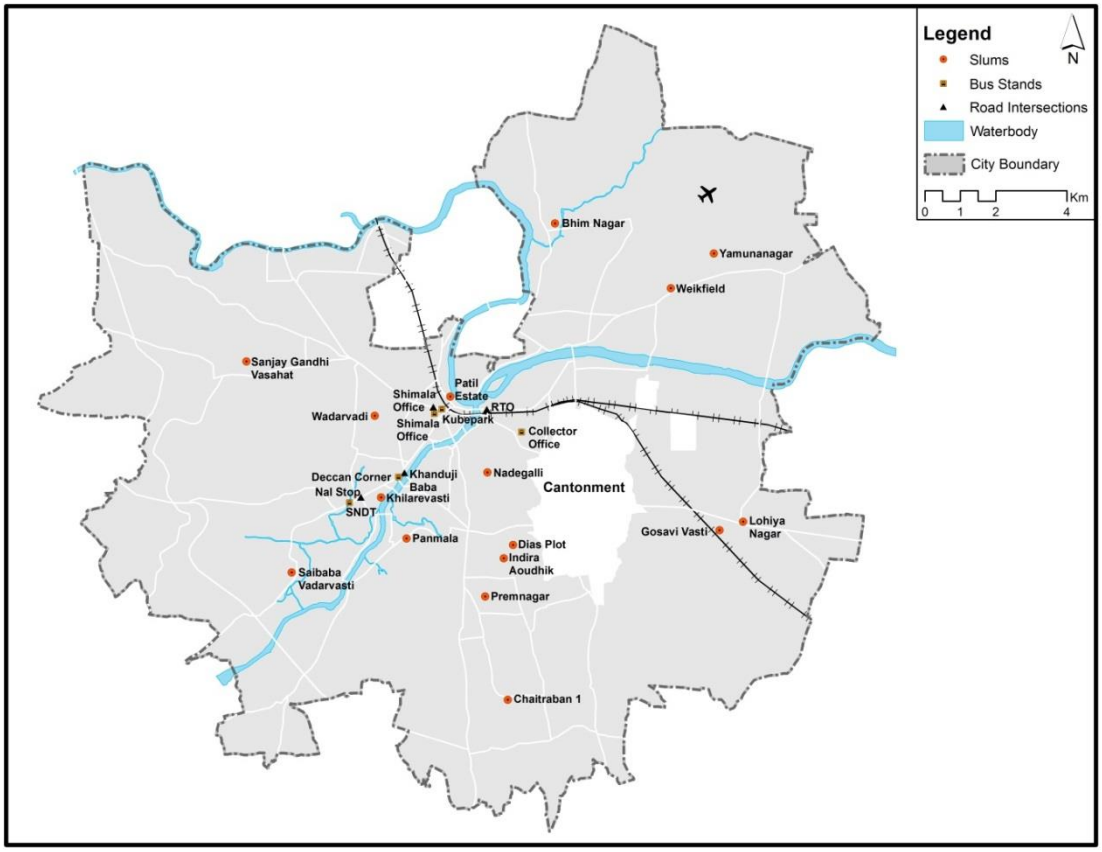
While in Pune, sample size for conducting FGDs/ rapid assessment at settlement-level was 3 per cent of the slums present in the city. FGDs in 16 slums were conducted. Out of which, in 13 settlements, FGDs were conducted with groups of men and women, both. However, in three settlements - Weikfield, Patil Estate and Sanjay Gandhi Vasahat, FGDs were feasible with women groups only. These settlements were approached through the Slum Sanitation and Health Welfare Advanced Approach System (SHWAAS)[57] programme of PMC, Mashal and Kagad Kach Patra Kashtakari Panchayat (KKPKP). The settlements were selected on the following criteria - (i) ownership of land (on which the slum settlement is located) – Government owned/ private; (ii) location of slum for instance on hill slopes and on river banks; (iii) settlements wherein communities of rag-pickers/ SC/ ST communities reside; and (iv) geographical spread across the city. Based on these criteria, 16 settlements were selected wherein FGDs/ rapid assessments at settlement-level were conducted (See Figure 5.7 for location of slums and Annexure 7 for details). In order to assess performance of public transportation services and availability of road infrastructure provided in the city, (i) four major road intersections in the city were selected for conducting gendered traffic counts; and (ii) four bus stands with high ridership, were selected for conducting gender passenger counts at these stands (See Figure 5.7 for location of road intersections and bus stands and Annexure 9 and 10 for details)

---

[56] Most of the residents were inebriated, when the team reached the settlement to conduct FGD in afternoon.

[57] With the objective to address sanitation problems in slums, PMC has started SHWAAS programme (Innovative solutions to sanitation in urban slums) in collaboration with CHF India Foundation. This project is being funded by the European Union and is for a period of five-years during which it aims cover 90 slums in the city (18 slums per year) to ensure proper maintenance and service in toilet blocks, through dialogue between resident community volunteers (RCVs) and PMC. Thus, the success of this programme yet remains to be seen.

Figure 5.7: Location of sample slums, road intersections and bus stands in Pune.



Source: Prepared by Centre for Urban Equity.

5.4.1. Water Supply

A. Bhopal

Table 5.26: Performance Assessment of Water Supply by Women, Bhopal

Sub-sector	Indicator	Parameters	Performance Assessment Method	Comments
Water Supply	Coverage of piped water supply	% HH having piped water	Secondary data – SLB report of MoUD	67 %
	Service timing	Duration (in hrs/ mins)	FGD/ Rapid assessment at settlement-level	Varies between 30 -90 minutes
	Quality	Potable (y/ n)		No - Small-sized impurities, foul smell were common complaints during FGDs
		If non-potable, why?		
	Pressure	Low/ High		Low/ Medium
	Pricing	Subsidies to women-headed HH	Secondary data – BMC reports & FGD at settlement-level	Nil

In terms of water supply, out the 12 sample slum settlements, around 10 settlements had accessed to piped water supply while BMC supplied water tankers in the other two settlements (P.C.Nagar and Hinotiya Alam) twice/ thrice every week. Out of ten settlements, only two settlements – Shyam Nagar and Gareeb Nagar (Near Chola

Railway Station) had individual water supply connections in every household; while the remaining eight settlements accessed water either through community taps/ water tanks[58] present/ installed in the settlements. In some cases, the water supply was augmented through water tankers from BMC. All 10 settlements having access to piped water supply (either through individual household-level connections/ community taps/ water tanks) reported medium/ low pressure of water.

> "*Subah paach baje se line mein kadha hona padta hai. Itni larai hoti hai aurato ke beech. Aur paani ka pressure bhi kam hota hai. Adha Adha ghanta lagta hai, char dol bharne ko*" (We get up early, at 5 am in the morning, to stand in a queue. Women fight a lot. The pressure of water is also low. It takes half an hour just to fill 4 buckets of water) (From FGD with women in Baba Nagar 2)

Figure 5.8: Women filling water in Baba Nagar 2.

Source: Centre for Urban Equity.

The duration of water supply varied settlement-wise - from half hour to two hours. Common observations, during FGDs in these eight settlements, include incidence of fights between women while filling their water containers, presence of foul odour during the initial period of water supply (for approx. 10-15 minutes) and small-sized

[58] In Banjara Basti, located in Ward No. 62 (See Figure 5.6 for location), two water tanks of capacity 5000 litres each were installed by the ward councilor. However, only one water tank was connected with the distribution line while the other was non-functional.

impurities. In most cases, women sieved the water before using it for potable purposes. (See Annexure 2 for details)

While the two settlements, wherein water was being supplied solely through water tankers, the residents, especially women complained about irregular timings of the water tankers which acts as an impediment for those willing to go out for work.

> "*Koi bharosa nahi hai, kab paani ka tanker aayega. Kabhi subah aata hai, kabhi sham ko. Aur joh aata hai, who bhi pura bhara nahi hota aur shirf dus pandharah minaat ke liye thaharta hai. Aab kya koi tanker ka intezar karenga yah kam pe jayega. Iss liye aurate kam pe nahi jaati hai yaha*" (There is no fixed timing for water tanker to come. Sometimes it comes in morning, sometimes in evening. The water tanker is not filled fully. It hardly stops here for 10-15 minutes. Would anyone wait for the tanker to come or go for work? Which is why many females in the settlement do not go out for work) (From FGD with women in Hinotiya Alam- 610 Jhuggi, Kolar)

Figure 5.9: Water Supply through BMC Water Tanker, Gondh Basti, Near New Central Jail.

Source: Centre for Urban Equity.

Although, in many settlements (for example, Purana Nagar, P.C. Nagar etc.), which did not have individual household water supply connections, Narmada water supply pipelines had been laid recently by digging the internal paved roads of the settlements

(over the past year). However, water supply through these has yet to commence, as the residents are yet to pay charges for connections. No subsidized costs were provided for the same to female-headed households. Neither the dug roads have been repaired.

Overall, the satisfaction levels for water supply, in terms of quantity and quality of water, among women varied from 1-4 in most of settlements. Women of only two settlements – 100 slum quarters and Gondh Basti – ranked their satisfaction level to 4. Some common complaints were low pressure, in adequate quantity, presence of foul odour and particles in the water, irregular timings etc.

B. Pune

Availability of piped water supply among slums was found close to 100 per cent. All 16 settlements had access to piped water supply at household level. Only in three settlements, respondents stated that a few households did not have individual taps within their homes. In such cases, women would go to other households to fill water. During one discussion, a respondent stated "*nal hai, par paani nahi aata*" (there is a tap but no water). Interior households within settlements may not receive water at all. A difference in quantity and pressure of supply existed within settlements itself. This was very common among settlements on hill slopes - where households on higher elevations had lower quantity or/ and pressure of supply. These differences in supply also exist because some households tend to pull more water through pumps, reducing water availability for others.

Regarding quality of water supply, there were a few complaints. In some instances, residents described water being muddy or had a bad smell for initial ten minutes to half an hour of supply. In Yamunanagar slum, women were highly dissatisfied with the quality of water largely due to contamination of sewage water with the water supply pipeline. In many FGDs, it was found not only quantity but also quality of water differed within a settlement. For instance, in Gosavi Vasti, some pockets of the settlement received contaminated water due to leakage in the sewerage pipeline which was running above the water supply pipeline.

In Dias Plot, women said that each household had two taps, one from the old connection and other from new. But water was being supplied only through the new connection, which reaches only in some parts of the slum, not all households. In this slum, one part of the settlement receives water twice a day while the other part receives only once. The access to water in these settlements is also mediated by political processes. In Bhim Nagar, women took pride in stating that if water is of a poor quality, they take a bottle of it to the ward corporator and demand clean water. On the other hand, residents of Lohiya Nagar, stated that their settlement does not receive water due to local politics between parties, that they have no influence over.

Figure 5.10: Basic services in Pune – Water. From top left clockwise: (i) Water tap in Dias Plot; (ii) Women from a few households filling water at a single tap in Dias Plot; (iii) Storing water due to current shortage in Gosavi Vasti; (iv) Water storage drums in Indira Aoudhik

Source: Centre for Urban Equity.

Table 5.27: Performance Assessment of Water Supply, Pune

Sub-sector	Indicator	Parameters	Performance Assessment Method	Comments
Water Supply to Individual Households	Coverage of piped water supply	% HH having piped water	Secondary data – CDP	94 %
	Service timing	Duration (in hrs/ mins)	FGD settlement-level	24hrs to 4 hrs
	Quality	Potable (y/ n)	Secondary data - CSP	Yes
	Pressure	Low/ High	FGD settlement-level	Low to medium
	Pricing	Subsidies to women-headed HH	Secondary data – PMC	Annual water tax

Of FGDs conducted, 14 groups of women were asked to rate their satisfaction of water supply on the basis of both quality and quality of water supplied on a scale of one to five. Overall, level of satisfaction was high, seven groups rated 5, three groups rated 4, two groups rated 3 and two groups rated 2, respectively – indicating a high level of satisfaction among the residents. What was evident across these settlements was acute water shortage in the city due to deficient rainfall this year. In most settlements, water was being supplied only on alternate days, for two to six hours – a temporary arrangement by PMC.

5.4.2. Sanitation

A. Bhopal

In terms of coverage of toilet facilities, in these 12 settlements, only six settlements had access to same; out of which only Shyam Nagar and Hinotiya Alam had access to individual household toilets. However, in Hinotiya Alam, the drainage lines and septic tanks were choked and pools of sewage water stagnate in the settlement. In other four settlements, only *pucca* hutments had access to individual toilets. During the FGDs, it was reported that people did not prefer to construct individual toilets either due to lack of space, money or temporary structure of their hutment. However, all hutments in these settlements had enclosures made for bathing purposes, which were connected to the sewerage network in most cases.

Table 5.28: Performance Assessment of Sanitation by Women, Bhopal

Sub-sector	Indicator	Parameter	Performance Assessment Method	Comments
SWM	Door-to-door collection	Availability of door-to-door collection (y/ n)	FGD/ Rapid assessment at settlement-level	Yes – but in most of sample slums, either community bins were present/ residents resorted to dumping in open spaces/ *khadan/ nallah*
		% HH coverage of door-to-door collection	Secondary data – SLB report of MoUD	25 %
		Frequency of collection	FGD/ Rapid assessment at settlement-level	Daily
	Community collection	Availability of public disposal bin/ collection site (settlement level, y/ n)	FGD/ Rapid assessment at settlement-level	Yes – in most of settlements disposal bins were present. However, wherever absent, residents resorted to dumping in open spaces/ *khadan/ nallah*
		Frequency of collection		Twice/ thrice in a week
Sewage	Household toilets	% HH with toilets	FGD/ Rapid assessment at settlement-level	Only 20 % sample slums
		Connection of toilets to sewer lines (%)	Secondary data - SLB report of MoUD	10.4 %
		Sewer lines covered (y/ n)	FGD/ Rapid assessment at settlement-level	N – Mostly *katcha* and uncovered.
	Community toilets	Presence of community toilets (y/ n)	FGD/ Rapid assessment at settlement-level	Yes
		Maintenance of community toilets (y/ n)		No – in most cases residents hired cleaners themselves
		Safety of community toilets		N
	Open defecation	Open defecation (y/ n)	FGD/ Rapid assessment at settlement-level	Yes – wherever there were no individual and community toilets
Storm Water Drainage	Coverage	Coverage of storm water drainage (y/ n)	Secondary data - SLB report of MoUD	50 %

While residents of the remaining six settlements either accessed pay and use community toilets (built by the BMC) or defecated in open spaces available in the vicinity. For pay and use toilets residents either paid INR 5 for each visit or had monthly pass of INR 30 for the entire household. However, none of these were either maintained properly or cleaned regularly, except in Gautam Nagar (here the community pay and use toilet was located on the main road, not within the settlement). Sometimes, the residents, themselves, hired a cleaner to clean the community pay and use toilet (in Purana Nagar). During FGDs, women reported that they felt unsafe using the community toilets due to lack of proper doors and latches and many outsiders also accessed these toilets. Inadequate number of seats (number of seats for men varied between four to six whereas there was only one seat for women in most cases) and long queues were also other impediments that deterred them from using these toilets. Hence, open defecation, in open spaces/ nearby *khadan* (deserted stone quarry), was commonly practiced.

Figure 5.11: Overflowing septic tanks, Hinotiya Alam.

Source: Centre for Urban Equity.

Figure 5.12: Temporary hutments in Gautam Nagar.

Source: Centre for Urban Equity.

Around ten settlements had sewerage network, except Banjara Basti and Gautam Nagar. However, the sewerage network in the settlements consisted of *katcha* and either open or partially covered drains. The residents, themselves, had covered these drains by putting stone slabs over them. Nevertheless, most of these drains were choked, resulting in stagnant water, hence were grounds for breeding mosquitoes. Whereas in Banjara Basti and Gautam Nagar,[59] water streams from bathing enclosures were not connected to any sewerage network – flowed naturally along the slope of the settlement. During FGDs, it was reported that many times residents, themselves, cleaned choked drains in spite of registering complaints in the concerned department of BMC. The satisfaction levels of women, in terms of working of the sewerage network ranged from 0 (wherein no network was present) to 3.

Also, in terms of the solid waste disposal system, community bins were present in only three settlements. Out of which, these were emptied every day only in two slums (Shyam Nagar[60] and Banjari Basti) and once in a week/ fortnight in Gondh Basti. In remaining nine settlements, women reported that they threw waste in the available

[59] This settlement consisted of mostly rag-pickers – predominantly belonging to Gond tribe (one of the recognized ST in Madhya Pradesh). It was located on a private land in the central part of the city. All hutments, in terms of their structure, were *katcha* (See Figure 5.12) and adjoining each other. The internal lanes within the settlement were hardly two feet wide – enough for a person to pass through.

[60] However, during field visit to Shyam Nagar, it was observed that community bins were overflowing with waste and most of it was littered in the surrounding area.

open spaces in vicinity of their settlements/ vacant *khadan* or burnt refuse. In many cases such as Purana Nagar,[61] Hinotiya Alam, these spaces were located adjoining the settlement. The satisfaction level of women in terms of solid waste disposal facility varied from 0-3. Overall, the residents of the settlements, wherein FGDs were conducted, complained about lack of community bins and irregular picking up of waste by the concerned department of the BMC.

Figure 5.13: Waste disposal in vacant space, Purana Nagar.

Source: Centre for Urban Equity.

In none of the settlements, storm water drainage system were present. The settlements depended on topographical conditions on which they were located. In many cases, it was reported that it took around 1-2 days for rainwater to run-off. In case of Gondh Basti[62] and Banjara Basti, women reported in the FGD that due to heavy rainfall, many times hutments also collapsed.

B. Pune

Sanitation was an acute problem across all slums. Toilet facilities in slums, if existed, were not maintained, under-supplied and overall deficient. Very few households in slums had individual toilets due to lack of adequate space. Pay-and-use community toilets were most commonly found. In most slums, entire community had access to only one toilet, with a minimum of 10 seats for men and women. In many cases, toilets were blocked, thus only a few of the total remained functional.

61 During FGD, the residents reported that community bins, provided in the settlement earlier, have been removed since past one month. Hence, the residents throw the waste in the vacant space available at the entrance of the settlement (See Figure 5.13).

62 This settlement consists of hutments located on plain area as well as up-hill.

In most cases, community toilets were operated in pay-and-use format. All households paid a minimum of INR 30 per household every month. The major complaint was regarding lack of maintenance of toilets. In most cases, the assigned municipal worker was not regular. PMC hired contractors who are required to send cleaners to maintain these toilet blocks. Most of the newly constructed toilet blocks had provision of living quarters for cleaners. However, few are occupied and cleaners absent. For instance, in Gosavi Vasti, out of the six community toilets two were closed due to lack of cleaners. Due to lack of response from the PMC, community members contributed money and hired cleaners. In few cases, cleaners were provided lodging above the toilet blocks.

Table 5.29: Performance Assessment of Sanitation, Pune

Sub-sector	Indicator	Parameter	Performance Assessment Method	Comments
SWM	Door-to-door collection	Availability of door-to-door collection (y/ n)	FGD at settlement-level	Yes, in some settlements
		% HH coverage of door-to-door collection	Secondary data – CSP	52.70 %
		Frequency of collection	FGD at settlement-level	Daily
	Community collection	Availability of public disposal bin/ collection site (settlement level, y/ n)	FGD at settlement-level	Yes, in some settlements
		Frequency of collection	FGD at settlement-level	Daily to one week
Sewage	Household toilets	% HH with toilets	Secondary data - CDP	97.60 %
		Connection of toilets to sewer lines (%)	FGD settlement-level	All
		Sewer lines covered (y/ n)	Rapid assessment at settlement-level	Yes
	Community toilets	Presence of community toilets (y/ n)	FGD settlement-level	Yes
		Maintenance of community toilets (y/ n)		Medium to low
		Safety of community toilets		Yes, in some settlements
	Open defecation	Open defecation (y/ n)	Rapid assessment at settlement-level	No
Storm Water Drainage	Coverage	Coverage of storm water drainage (y/ n)	Secondary data - CDP	55 %

Figure 5.14: Basic Urban Services Pune – Sanitation: Toilet blocks at (i) Bhim Nagar on left; (ii) Weikfield; (iii) Yamunanagar; and (iv) Dias Plot (From top left clockwise)

Source: Centre for Urban Equity.

Complaints about blocked or chocked drains were common. In case of blocked pipes, municipality workers took minimum 2-3 days to respond. In some cases, respondents made repeated complaints to get a blocked drain fixed. Apart from lack of water supplied to toilets, current shortage of water had also been a major concern among respondents. Due to which, toilets were not cleaned as often. Cleaners often came only on days when water supply was present - in many instances this was only once a week. In some cases, cleaners did not undertake their assigned tasks due to altercation with either contractor/ community members. In case of Premnagar, community members hired a worker on their own, due to negligence on part of corporation's appointed worker. However the hired worker was beaten up, thus he ran away. Respondents in many slums expressed their frustrations in the FGDs regarding lack of maintenance of toilets. Nadegalli respondents stated they had been complaining for a long time to PMC officials regarding the state of toilet bock in their slum, without successes - "*Jab system hi hume support nahi kar raha toh hum kyun aapna time waste karien"* (when the system is not supporting us, why should we waste our time [complaining to them]).

Figure 5.15: Basic Urban Service in Pune – Drainage: (i) Gosavi Vasti; (ii) Panmala; (iii) Wadarvadi; and (iv) Flooding at Saibaba Vadarvasti last year (From top left clockwise)

Source: Centre for Urban Equity.

The drainage system found in slums was unique to Pune. A main drainpipe line passed through middle of the narrow streets, with a raised but covered opening/ a small hole in the ground leading to drain pipes. Most women cooked and washed outside their houses on the street so that the water drained into these openings. These drains also acted as the storm water drains, as there was no separate provision for storm water drainage. However, these drains were often blocked/ choked due to which water would flow out back on the streets during monsoons. Thus, flooding/ water lodging were common problems in all settlements.

With regard to SWM, there are multiple types of services operating under PMC. They include *ghanta gaadi* provided by the PMC, PMC-appointed road sweepers, open community bins that are emptied regularly (in most cases on a daily basis) and service provided by SWACH (limited outreach). In case of door-to-door collection, residents were required to pay about INR 30-40 per month for service. However in many cases, residents were not willing to pay. Most of the waste collection services required residents to separate wet and dry waste. Overall, comments have been mixed. In many slum settlements, residents were not satisfied with the service. In Weikfield, open dumping is commonly practiced. Of 17 settlements, four did not have access to SWM services. In Chaitraban, in absence of waste management service, women sneaked into nearby societies at night and dispose of household waste. In Khilarevasti, the problem of solid waste management is compounded by the fact that women left early

to work while the *ghanta gaadi* came later during the day, thus the residents resorted to dumping waste in the river. In Nadegalli, residents were not satisfied with services provided. Their complaint was that although the *ghanta gaadi* came daily, there was only one pickup point for the entire settlement. While in Saibaba Vadarvasti, *ghanta gaadi* did not enter the settlement, but stops outside; thus many residents dumped waste in the available open spaces.

Figure 5.16: Basic Urban Services Pune - Solid Waste Management: (i) Solid waste dumping container at Sanjay Gandhi Vasahat; (ii) Open dumping of waste at Gosavi Vasti; (iii) Ghanta gaadi at Dias Plot; (iv) Indira Aoudhik (From top left clockwise)

Source: Centre for Urban Equity.

5.4.3. Public Housing

A. Bhopal

Studies have been undertaken to assess the implementation of public housing programmes (BSUP, etc.) through social audits. In Bhopal, most of the slum settlements chosen for BSUP were already given tenure under the Patta Act, i.e. had very high tenure security and hence they had already improved conditions and the residents did not require coverage under any other housing programme (Mahadevia et al. 2013). Thus, this faulty selection of settlements for BSUP intervention converted the beneficiaries from landowners to loan borrowers. Also, it meant end to various subsidies such as subsidized electricity charges, water charges and nil property/ maintenance charges, etc., enjoyed by the households earlier.

Table 5.30: Performance Assessment of Housing by women, Bhopal

Sub-sector	Indicator	Parameter	Performance Assessment Method	Comments
Slum/Informal Settlements	Security of land tenure	Ownership of land (government/ private/ other)	FGD/ Rapid assessment at settlement level	Government/ private
	Provision of basic services	% HH having provision of basic services		
	Upgrading	Slum upgrading schemes (y/ n)		Yes
Public Housing	Provision of public housing	Subsidies in beneficiary contributions for women-headed HH (y/ n)	Secondary data – from BMC	No
		Quality of construction (satisfaction level of female residents)	FGD/ Rapid assessment at settlement-level	Ad-hoc and faulty planning and decision making, omission of significant components (absence of water supply pipes in Shabari Nagar, blocked sewage systems, lack of solid waste disposal system, improper electrification and location of transformers etc.)
			Social Audit of BSUP – Mahadevia et al. 2013	
		Availability of infrastructure facilities (community hall/ temple/ mosque, open spaces, street lighting, childcare/ creche)		Around 4 BSUP sites are located in peripheral areas. During site planning none of the DPRs had planned for infrastructure facilities
Women-Specific Housing	Working women hostel	Availability of beds (%)	Secondary data – from BMC	No budgetary expenditures/ allocations have been made by BMC for this head
	Homeless shelters	Availability of beds for women (%)	Report of Vikas Samvad	Place for women found in the permanent shelters but not in temporary shelters

Figure 5.17: Shabari Nagar BSUP Housing.

Source: Centre for Urban Equity.

Figure 5.18: Madrasi Nagar BSUP Housing

Source: Centre for Urban Equity.

We take findings from the social audit of the BSUP programme (Mahadevia et al. 2013). By the time, the beneficiary lists for various sites such as Shabari Nagar etc., were finalized, many DUs were vandalized. In some cases, the beneficiaries, frustrated with the slow progress of allotment process, forcefully occupied these units. Many units were illegally occupied by various anti-social and political elements. Beside, in some sites, like Madrasi Colony, many eligible beneficiaries were left out in the selection process due to absence of proper documents. Also, ad-hoc and faulty planning and decision making, omission of significant components (absence of water supply pipes in Shabari Nagar, blocked sewage systems, lack of solid waste disposal system, improper electrification and location of transformers, etc.) coupled with absence of involvement of the community in planning and decision-making indicates the extent of malpractices occurred during the implementation of BSUP in Bhopal. At present, people are found to be living in these sites in such appalling conditions (See Figure 5.17 and Figure 5.18)

B. Pune

Regarding housing, most slum dwellers spoke negatively about the SRS projects in Pune (modelled on similar lines as in Mumbai). In many FGDs, residents opined mistrust regarding quality of construction, towering heights of constructed buildings, etc. Many felt that such schemes should not be more than three floors as eventually the beneficiaries lacked financial capacities to maintain lift facilities in these buildings, thereby causing difficulties for residents in case of shortage of water supply and other emergencies. Further, there were apprehensions regarding ease of access for senior citizens, small DU size and lack of space for future generations, etc.

Table 5.31: Performance Assessment of Housing, Pune

Sub-sector	Indicator	Parameter	Performance Assessment Method	Comments
Slum/Informal Settlements	Security of land tenure	Ownership of land (government/ private/ other)	FGD at settlement-level	Govt. and private
	Provision of basic services	% HH having provision of basic services		NA
	Upgrading	Slum upgrading schemes (y/ n)	Secondary data – from PMC	Yes, SRS and BSUP
Public Housing	Provision of public housing	Quality of construction (satisfaction level of female residents)	Secondary source – Shelter Associates (2012)[63]	Quality of construction and design are poor, and site layouts dangerous on BSUP sites
		Availability of infrastructure facilities (community hall/ temple/ mosque, open spaces, street lighting, childcare/		Basic services are provided but not adequate and infrastructure of poor quality on BSUP sites

[63]Details accessed from http://shelter-associates.org/sites/default/files/BSUP%20Critique%20Flyer_0.pdf on November 2, 2015.

		creche)		
Women-specific housing	Working women hostel	Availability of beds (%)	Secondary data – from PMC	No details available in budgetary documents of PMC
	Homeless shelters	Availability of beds for women (%)	Secondary data - from PMC	

5.4.4. Public Transportation

A. Bhopal

In order to understand the gender-segregated usage of road, three major road intersections – (i) Board Office; (ii) Roshanpura; and (iii) Lalghati were selected. The first two of these are located in the new Bhopal while the third intersection is located in the old city. At all three intersections, male and female counts, for morning, afternoon and evening, using different modes of vehicles (excluding buses) were undertaken for 15 minutes. Thus, per hour counts (for morning, afternoon and evening) were derived for each intersection (counts for 15 minutes X 4). Further, considering 18 operational hours in a day, peak timing consists of three hours each in morning and evening, respectively and non-peak timings consist of remaining 12 hours. By multiplying these with the per hour counts, the total number of males and females at each intersection per day were estimated. By taking average of the proportion of males and females counts of all three intersections, it was estimated that the proportion of men to women travellers in the city is 79:21 (See Annexure 4 for details)

Table 5.32: Performance Assessment of Public Transportation, Bhopal

Sub-sector	Indicator	Parameters	Performance Assessment Method	Comments
Footpaths & Roads	Walkable footpaths	1.5 m width	Rapid assessment/ Observation/ Embarq report	Present only on major roads/ commercial areas. But insufficient and obstructed footpaths
	Street lighting	Presence of street lights (y/ n)		Present only on major roads/ commercial areas. In many slum settlements, they were non-functional
	Traffic signals	Signalization (y/ n)		Yes
		Zebra crossing (y/ n)		Yes
	Foot-over Bridges	Presence (overhead or underground) (y/ n)	Rapid assessment/ Observation	Yes - Newly constructed ones had escalators as well as on-site security guards
		Presence of functioning lighting (y/ n)	Rapid assessment/ Observation	Yes
Buses/ BRTS	Bus stand	Presence of bus shelter (covered/ uncovered) (y/ n)	Rapid assessment/ Observation	Covered as well as uncovered. (underneath foot-over-bridges)
		Presence of lighting at bus shelter (y/ n)		No – Non-functional in many
		Presence of display systems/ maps/ signage (y/ n)		Neither the display systems were working, no maps or signage's present
	Buses	Presence of organized	Secondary data	22.19 % (calculated –

		public transport in urban area (%) (SLBs for Urban Transport)	(Census 2011, Embarq report, SLB report for Urban Transport of MoUD)	(Total no. of buses under BCLL/ Total number of buses in the city (formal and informal))*100 – as defined in the SLB report for Urban Transport of MoUD)
		Number of buses per 1000 population		0.12 (calculated – (No. of Formal red buses/ city population (Census 2011))*1000)
		Seats gender segregated (y/ n)	Observation	Yes
		Availability of travel subsidies for women (y/ n)	Secondary data (from BCLL)	Nil - but has been recommended by Embarq
		Presence of operational interior lights on board bus (y/ n)	Rapid assessment/ Observation	Yes
		Number of female harassment cases registered	Embarq report	More than 36,000 complaints were reported from the state in a span of 11 months, after launch in January, 2013 and maximum number of complaints were filed from Bhopal.
	Gender Sensitivity Among driver-conductor	Presence of training Programmes (y/ n)	Embarq report/ Interview with Sangini	Yes – In collaboration with Sangini (a local NGO) and Police department
		Grievance Redressal Facility (y/ n)	Observations/ Embarq report	Yes – Women helpline number (1090) is displayed in buses
	Usage	Passenger count (% women passengers)	Gender passenger counts at BRTS junctions	34.58 % (as per survey – Refer Annexure 5)

Figure 5.19: Mini buses, Hamidiya.

Source: Centre for Urban Equity.

Following five BRTS junctions were selected for conducting passenger counts disaggregated by gender – (i) Jyoti Talkies; (ii) New Market; (iii) Lalghati; (iv) Royal Market; and (v) Hamidiya. On four of the five junctions, there were separate bus-stations for buses going in different directions and hence we had to undertake passenger counts at eight stations on the four junctions. The route at Hamidiya was one-way; thus there was a need to carry out passenger count at only one bus stop. All selected BRTS stands were not located on dedicated BRTS corridors, i.e. BRTS buses were operating with other vehicles in mixed-traffic lanes.

In Bhopal, the BRTS is operational from 5:00 hours to 23:00 hours every day, i.e. for 18 hours per day. At all five BRTS junctions, the total number of males and females boarding and alighting at respective bus stands were taken during morning, afternoon and evening peak hours for 15 minutes. Thus, per hour passenger counts (for morning, afternoon and evening) can be derived for each BRTS junctions (gender passenger counts for 15 minutes X 4). Further, considering 18 operational hours in a day, peak timing consists of three hours each in morning and evening, respectively, and non-peak timings consist of remaining 12 hours. By multiplying these with the per hour passenger counts, the total number of males and females passengers at each BRTS junction per day were estimated. By taking average of per cent of female passengers of all five BRTS junctions, around 34.58 per cent of passengers using BRTS consisted of females (See Annexure 5 for details)

Figure 5.20: Non-functional display boards, New Market.

Source: Centre for Urban Equity.

During the study, it was observed that the frequency of BRTS buses was less, in comparison to the frequency of mini buses and Tata Magic[64] due to which passengers eventually preferred boarding these informal modes of transport (See Figure 5.19). However, overcrowding was common in both informal modes of transport. Although the bus stands are open and airy, they are poorly designed for physically challenged; none of them had any provision of ramp for wheelchairs. The display boards at all selected junctions were found to be non-functional. The passengers resorted to asking the conductors about the details of the bus route. No information about the bus routes, in form of maps/ any other user friendly form, was available at the bus stops (See Figure 5.20). Most of the bus stops were poorly lit and hence found to be deserted in evening. The women passengers were not seen on these bus stops after sunset.

B. Pune

Public transpiration services are provided by PMPML in the city, and other private services are not available apart from auto-rickshaws, especially within the city In most slum settlements, women, mainly, worked as housekeepers, maids or cooks in nearby societies/ gated communities, few worked as labourers, street vendors and rag-pickers. Most of women walked to their work places, very few used public transportation services. All sample slum settlements had access to public transport. Bus stands were available in the immediate vicinity of the settlements. However, most complaints were regarding lack of frequency of buses, overcrowding and cost of bus tickets. Further, on basis of observations, basic infrastructure for bus stands was found to be insufficient. Since most of the bus stands were constructed on footpaths itself, there was less seating capacity and passengers waiting for buses were spilling out in most cases. Also, in absence of ramps, these bus stands were poorly designed for physically challenged. Besides, they were poorly lit and in most cases had no/ very little information on bus timings, even if route numbers were mentioned.

Table 5.33: Performance Assessment of Transportation, Pune

Sub-sector	Indicator	Parameters	Performance Assessment Method	Comments
Footpaths & Roads	Walkable footpaths	1.5 m width	Rapid assessment/ Observation	Yes
	Street lighting	Presence of street lights (y/ n)	Rapid assessment/ Observation	Yes
	Traffic signals	Signalization (y/ n)	Rapid assessment/ Observation	Yes
		Zebra crossing (y/ n)	Rapid assessment/ Observation and Secondary data (research reports)	Yes, Low
	Foot-over Bridges	Presence (overhead or underground) (y/ n)	Rapid assessment/ Observation	Yes
		Presence of functioning lighting (y/ n)	Rapid assessment/ Observation	NA
Buses/ BRTS/	Bus stand	Presence of bus	Observation	Covered

[64] All private local buses and Tata Magic stopped over at all BRTS stands.

Metro		shelter (covered/ uncovered) (y/ n)		
		Presence of lighting at bus shelter (y/ n)		Street Lights
		Presence of display systems/ maps/ signage (y/ n)		Yes
	Buses	Presence of organized public transport in urban area (%)	Secondary data - PMPML citizens report card	100%
		Number of buses per 1000 population	Secondary data - PMPML citizens report card	25 buses per lakh population
		Seats gender segregated (y/ n)	Observation	Yes
		Availability of travel subsidies for women (y/ n)	Rapid assessment	No
		Presence of operational interior lights onboard bus (y/ n)	Observation	Yes
		Number of female harassment cases registered	Secondary sources	565 complaints received in 2013 on women's helpline number DNA (2013).
	Gender sensitivity among driver-conductor	Presence of training programmes (y/ n)	Observation	Female bus conductors are present.
		Grievance redressal facility (y/ n)	Settlement-level FGD and Rapid assessments/ observations and secondary data	Yes (See DNA 2013)
	Usage	Passenger count (% women passengers)	Gender passenger counts at bus stands	36.25 % (as per survey – Refer Annexure 10)

6. Key Findings

The following chapter contains key findings from the two main analytical tools applied in this study – exercise on prioritization of services and benefit incidence analysis.

6.1. Prioritization of Services

As explained in the Chapter 2: Methodology, groups of men and women were asked to state in order of priority, from high to low, basics services that they feel a lack of. The following two sections elaborate on responses from Bhopal and Pune.

A. Bhopal

In most of the slum settlements, women ranked individual water supply to every household, toilet facility, proper solid waste collection system and functional streetlights as the most important services required in settlements, wherever these were lacking. The ranking of these basic services varied from settlement-to-settlement. For men, besides these four services (although there was difference in their ranking), better employment opportunities, transportation facilities, security of tenure (in order to invest in up-gradation of their houses) were also considered important. Infrastructure facilities such as establishment of government school/ community hall/ public distribution system shop in vicinity of the settlement were some other services mentioned on a lower rank (See Annexure 3 for details).

Table 6.1: Prioritization of services by men and women, Bhopal

	Men	Women
1.	Water supply at household level	Water supply at household level
2.	Individual toilet facility	Individual toilet facility
3.	Better employment facilities	Proper solid waste collection system
4.	Access to public transport	Functional streetlights
5.	Security of tenure	

B. Pune

Both groups of men and women, as part of this study, were asked to prioritize the services. Among men, the first priority was that of employment opportunities followed with availability of recreational spaces for children and clean toilets followed with housing. Among women, no clear priorities have emerged – First priority was given to availability of home-based work and clean well-maintained toilets. Second to proper SWM services especially door-to-door collection. Third highest priority was given to playground for children. Refer Annexure 8 for details.

Table 6.2: Prioritization of services by men and women, Pune.

	Men	Women
1.	Employment opportunities	Clean well maintained public toilets
2.	Clean Toilets	Home based work
3.	Recreational space	Door to door collection of SWM

4.	Housing	Playground for children
5.	SWM services	-

6.2. Benefit Incidence Analysis of Financial Allocations in Selected Sub-sectors

As explained in the Phase 8 of the Section 2.5 of this report, BIA of the financial expenditures has been conducted using per capita estimates for each of the four sub-sectors, in both Bhopal and Pune, as discussed below.

6.2.1. Water Supply

A. Bhopal

As discussed in the previous sections, water supply works in the city, including projects approved under JNNURM, are predominantly undertaken by the BMC. Additionally, BMC is in receipt of grants from the state government under ADB-funded project UDAY. The expenditures under water supply include establishment expenses, administrative expenses, capital works cost, operation and maintenance costs incurred on water treatment plants/ distribution networks, etc., under the functions of public works, civic amenities, JNNURM, ADB-funded project UDAY have been taken into account.

Table 6.3: Financial allocations (in INR Cr.) and Benefit Incidence Analysis for water supply in Bhopal[65]

Sub-sector	Programmes & Schemes	Allocating/ Implementing Agency	Actual Expenditure (2013-14)	Financial Allocation (2014-15)	Revised Allocation (2014-15)	Financial Allocation (2015-16)
Water Supply	Includes works undertaken by BMC and ADB-funded project UDAY.	BMC + PMU (UADD)	163.53	248.81	206.90	255.89
Per capita expenditure# (in INR) (A)			**865.38**	**1,284.45**	**1,068.09**	**1,288.65**
Per capita estimate reaching women based on satisfaction level (in INR) (B=0.5*A)			**432.69**	**642.23**	**534.05**	**644.33**

Notes: # These are obtained by dividing the actual expenditure (2013-14), financial and revised allocation (2014-15) and financial allocation (2015-16) with the population of the respective years. Using the population growth rate of 2001-11, population projections for the respective three years have been calculated which are as follows (i) For 2013-14 projected population is 1,889,644; (ii) For 2014-15 projected calculation is 1,937,086; and (iii) For 2015-16 projected population is 1,985,718.
Source: Estimated from the BMC Budget documents of 2014-15 & 2015-16.

Through the FGDs, it is evident that the satisfaction level among women in the city is 50 per cent,[66] which means that only 50 per cent of per capita estimates (of

[65] All expenditures incurred by the BMC for water pumping service station, water distribution section under the function of civic amenities, projects under JNNURM (Narmada Project) and works under ADB-funded project have been included. It is to be noted that works under ADB-funded project have been included under water supply sector as sector-wise classification of expenditures under this project is unavailable in budget document.

expenditure and allocations) reach to women. For the financial year 2015-16, INR 1,289 have been spent for each person. However, only Rs. 645 has been spent on each woman, given their satisfaction level is only 50 per cent.

B. Pune

PMC has a separate budget for water and sewerage functions under its 'C' Budget. The city is split into different zones and budget details are given as per different zones, which are - Pune Laskar and Khadki, Khadki, SNDT and Chaturshringi, Wagholi region, Warje, Wadgaon, New Holkar, New Lashkar and Pashan. Each zone has expenditure under the following heads: pumping expenditures, purification of water, operation and maintenance, emergency repairs and miscellaneous expenses. Apart from zonal expenditure, expenditure are incurred on salaries of permanent and contractual labourers, citizens awareness and ward-level works as part of its revenue expenditure. While, capital expenditure includes expenditure on drainage development fund; depreciation; Pashan, Dapodi, Bopodi, Bibwewadi and Dhankavadi water supply project funding; water supply and sewerage treatment funds and expenditure on water and sewerage treatment project. According the analysis given by Janwani, cost of supplying water is INR 5 per lpcd. The total water tax collected is INR 400 crores and tax collected per person per day is INR 4 (Janwani 2015).

Through FGDs conducted and observations made the satisfaction level[67] for water supply service is assumed at 0.80[68] which means around 80 per cent of per capita estimate of expenditures/ allocations reaches the population.

Table 6.4: Financial allocations **(** in INR Cr.) and Benefit Incidence Analysis of Water Supply in Pune[69]

Sub-sector	Programmes & Schemes	Allocating/ Implementing Agency	Actual Expenditure (2013-14)	Financial Allocation (2014-15)	Financial Allocation (2015-16)
Water Supply	Include works undertaken for water supply to different zones.	Sewerage and Water Supply Department, PMC	507.4	456.3	501.1
Per capita estimate# (in INR) (A)			**1,586.49**	**1,394.52**	**1,496.88**
Per capita estimate reaching women based on satisfaction (in INR) (B = 0.80*A)			**1,269.19**	**1,115.62**	**1,197.50**

66 Satisfaction levels, in the FGDs with women in Bhopal, with respect to quantity and quality of water supplied ranged between 20-80 per cent. For ease in calculation, average of 50 per cent has been considered.

67 Residents were asked to rate services on a scale of one to five based on quality and quantity of services they received.

68 Assumption by researcher, on basis of comments of residents during FGDs and observation of services provided. Responses in FGDs ranged from 0-5, with score of four and five having highest frequency (refer Annexure 7) and one and two lowest. Therefore, satisfaction level for most settlements ranged between 80-100 per cent.

69 This includes projects undertaken as part of water supply and water supply projects as part of 'C' budget.

Notes: # These are obtained by dividing the actual expenditure (2013-14), financial allocation (2014-15) and allocation (2015-16) with the population of respective years. Using the population growth rate of 2001-11, population projections for the respective three years have been calculated which are as follows (i) For 2013-14 projected population is 3,198,248; (ii) For 2014-15 projected calculation is 3,272,077; and (iii) For 2015-16 projected population is 3,347,610, respectively.
Source: Estimated from the PMC Budget documents of 2014-15 & 2015-16.

The BIA has been calculated by multiplying per capita estimates (A) (See Table 6.4 for detailed calculations) with satisfaction level of the services (B), we arrive at figure of INR 1,270 for year 2013-14, INR 1,115 for year 2014-2015 and INR 1,198 for year 2015-2016, indicating the extent of benefit of water supply accruing to women is only 80 per cent.

6.2.2. Sanitation

A. Bhopal

Table 6.5 includes expenditures incurred for (i) SWM – removal and collection of solid waste; management of landfill sites, etc.; (ii) sewage includes laying of sewerage network, maintenance of house sewer connections, surface drain maintenance, construction of pay and use community toilets; and (iii) storm water drainage facilities. It is observed that there is sharp increase in financial allocations under solid waste management and sewage facilities by the BMC, primarily due to development of infrastructure and other works at the new landfill site at Adampur Khanti, purchase of equipment and vehicles for disposal of solid waste, implementation of sewerage line under UIDSSMT etc. The satisfaction levels of women for the existing level of coverage of SWM collection,[70] sewerage network[71] and storm water drainage[72] in the city was 0.4, 0.5 and 0.2, respectively. The table below shows the amount of expenditures and allocations reaching out to women.

Table 6.5: Financial allocations (in INR Cr.) and Benefit Incidence Analysis of Sanitation in Bhopal

Sub-sector	Programmes & Schemes	Allocating/ Implementing Agency	Actual Expenditure (2013-14)	Financial Allocation (2014-15)	Revised Allocation (2014-15)	Financial Allocation (2015-16)
SWM[73]	Includes works by BMC, JNNURM projects	BMC	24.57	33.77	37.52	161.52
Sewage[74]			1.96	9.26	8.22	21.03
Storm Water Drainage[75]			12.84	17.85	12.35	7.74
Total for Sanitation (in INR)			**37.41**	**60.88**	**58.09**	**190.29**

[70] Not all settlements were covered under door-to-door collection. Many were dumping waste in open spaces available nearby

[71] All settlements had small, *katcha* and partially covered drains/ *nallahs*. The residents had covered the drains partially with stone slabs

[72] None of the settlements had storm water drains. Depending upon the terrain on which the settlement was located, water-logging problems varied from settlement to settlement.

[73] Works undertaken for removal and collection of solid waste, landfill site management, training and development of rag-pickers etc. have been included.

[74] Includes expenditures incurred for works related to providing toilets at household-level and community-level.

[75] Includes works undertaken for construction of storm water drains under public works function and JNNURM.

Per capita estimate for SWM# (in INR) (A)	130.03	174.33	193.70	813.41
Per capita estimate for Sewage# (in INR) (B)	10.37	47.80	42.42	105.91
Per capita estimate for Storm Water Drainage# (in INR) (C)	67.93	92.15	63.76	38.98
Per capita estimate for Sanitation (in INR) (D=A+B+C)	**208.33**	**314.29**	**299.87**	**958.29**
Per capita estimate reaching women under SWM (in INR) (0.4*A)	52.01	69.73	77.48	325.36
Per capita estimate reaching women under Sewage (in INR) (0.5*B)	5.19	23.90	21.21	52.96
Per capita estimate reaching women under Storm Water Drainage (in INR) (0.2*C)	13.59	18.43	12.75	7.80
Total per capita estimate reaching women under Sanitation (in INR) (E= Sum of above three rows)	**70.78**	**112.06**	**111.44**	**386.12**

Notes: # These are obtained by dividing the actual expenditure (2013-14), financial and revised allocation (2014-15) and financial allocation (2015-16) with the population of the respective years. Using the population growth rate of 2001-11, population projections for the respective three years have been calculated which are as follows (i) For 2013-14 projected population is 1,889,644; (ii) For 2014-15 projected calculation is 1,937,086; and (iii) For 2015-16 projected population is 1,985,718.
Source: Estimated from the BMC Budget documents of 2014-15 & 2015-16.

It is evident that there is an increase in financial allocations made by BMC, i.e. from 34 per cent in 2013-14 to 40 per cent in 2015-16 which is a positive sign. However overall, not more than 40 per cent of its expenditure is reaching women.

B. Pune

The 2015-16 budget shows a rise of 86 per cent for sanitation and SWM (Janwani 2015). The increase in allocation for SWM in current year as well as in previous year was because PMC plans to achieve 100 per cent garbage segregation and disposal of garbage at ward-level itself by setting up small garbage disposal projects like biogas and zero garbage projects. The sewerage network coverage in Pune is about 97 per cent, household-level of coverage for SWM is 52 per cent and coverage of storm water drainage is about 55 per cent. For the following analysis, satisfaction level of 0.8 for sewerage, 0.6 for SWM and 0.3 for storm water drainage have been assumed.[76] Further, here also we assume that 50 per cent of all expenditure benefits women.

Table 6.6: Financial allocations (in INR Cr.) and Benefit Incidence Analysis of Sanitation in Pune

Sub-sector	Programmes & Schemes	Allocating/ Implementing Agency	Actual Expenditure (2013-14)	Financial Allocation (2014-15)	Financial Allocation (2015-16)
SWM	Includes functions of collection, segregation,	SWM department,	51.24	62.13	117.34

[76] Assumption by researcher, on the basis of an informed guess from comments of residents during FGD and observation based rapid assessments.

	transportation and disposal of wastes[77] and road cleaning	PMC			
Sewage	Includes functions of sewerage	Sewerage and Water Supply Department, PMC	107.7	240.1	222.26
Storm Water Drainage[78]	Includes functions of maintenance of drainage network and storm water drain project.	Drainage department, PMC	99.66	148.87	118.21
Total for Sanitation (in INR Cr.)			**258.6**	**451.1**	**457.81**
Per capita estimate for SWM# (in INR) (A)			160.21	189.87	350.51
Per capita estimate for Sewage# (in INR) (B)			336.74	733.78	663.94
Per capita estimate for Storm Water Drainage# (in INR)(C)			311.61	454.97	353.12
Per capita estimate for Sanitation (in INR)* (D = A+B+C)			**808.56**	**1378.64**	**1367.57**
Per capita estimate reaching women under SWM (in INR) (E=0.6*A)			96.13	113.93	210.31
Per capita estimate reaching women under Sewage (in INR) (F=0.8*B)			269.39	587.03	53.15
Per capita estimate reaching women under Storm Water Drainage (in INR) (G=0.3*C)			93.48	136.49	105.94
Total per capita estimate reaching women under Sanitation (in INR) (H = E+F+G)			**459.0**	**837.45**	**847.40**

Notes: # These are obtained by dividing the actual expenditure (2013-14), financial allocation (2014-15) and allocation (2015-16) with the population of the respective years. Using the population growth rate of 2001-11, population projections for the respective three years have been calculated which are as follows (i) For 2013-14 projected population is 3,198,248; (ii) For 2014-15 projected calculation is 3,272,077; and (iii) For 2015-16 projected population is 3,347,610.
Source: Estimated from the PMC Budget documents of 2014-15 & 2015-16.

In the above table, per capita estimates are taken as sum of per capita estimates for SWM, sewerage and storm water drainage. Estimates for each sub-sector are multiplied with satisfaction levels of each sub-sector to calculate benefit are accruing to women. Based on the above table, there appears to be a fall in the percentage of per capita estimates reaching women over the three years. As of 2015-16, women receive 62 per cent of the benefit of total per capita expenditure.

6.2.3. Public Housing

Since allotment of DU to any household would equally benefit men and women. In this case, (i) per cent of housing shortage (prevailing in the city) being met by current housing programmes (Central/ State); (ii) status of property rights, i.e. whether women are given equal property rights; and (iii) estimate of further expenditure to be incurred by ULB in order to suffice pending housing shortage (depending on the calculation of (i)) can be computed.

[77] This includes collection of household waste, waste from hotels, garbage bins, construction and demolition waste, medical waste and non-hazardous industrial waste (PMC 2012).

[78] All works budgeted under drainage and drainage project as in 'C' budget.

A. Bhopal

Both BMC and BDA are involved in implementation of housing projects approved under various programmes such as JNNURM, RAY. Besides public housing, both agencies are also involved in construction of shelter for homeless, also referred as the *rein baseras* in various government documents. While calculating the figures for public housing, expenses incurred for purposes such as establishment (including salaries of staff, labourers have been included), administrative (including preparation of DPRs/ feasibility reports), operation and maintenance, interest and financial charges, etc., incurred under the functions of JNNURM and RAY have been taken into consideration.

Table 6.7: Budget for Housing in Bhopal (in INR Cr.)

Sub-sector	Programmes & Schemes	Allocating/ Implementing Agency	Actual Expenditure (2013-14)	Financial Allocation (2014-15)	Revised Allocation (2014-15)	Financial Allocation (2015-16)
Public Housing[79]	Includes works under JNNURM and RAY	BMC+BDA	307.41	640.28	354.11	588.76
Women-specific Housing[80]			0.31	0.89	0.84	0.34
Total for Housing (in INR)			**307.72**	**641.17**	**354.95**	**589.10**

Source: Estimated from the BMC and BDA Budget documents of 2014-15 & 2015-16.

In Bhopal, around 34 per cent of the housing shortage is being met by the current housing programmes (considering housing shortage of 43,205 (See Table 5.10) and housing supply of 14,603 (See Section 4.4)). Also, rebates in property registration fees are given in case the ownership of the DU is either in name of the woman of the beneficiary household or in case of joint ownership. Considering per DU construction cost of INR 1.5 lakhs and pending housing shortage of 28,602 units (calculated by subtracting housing supply being met by current housing programmes from housing shortage in the city), BMC is expected to incur further expenditure of approximately INR 430 crores to cover up the pending housing shortage in the city.

B. Pune

In context of slum improvement, revenue expenditure consists of 60 per cent on salaries, 30 per cent on ward office works and 10-15 per cent on toilet repairs. Under capital expenditure, 51 per cent is allotted to development works and 39 per cent to construction of toilets.

[79] This includes expenditures incurred by BMC for public housing, slum rehabilitation and redevelopment etc., under the functions of public works, JNNURM and RAY as well as the housing schemes developed by BDA for various sections of the society (includes self-financing schemes, JNNURM projects and RAY schemes).

[80] Includes expenditures incurred by the BMC for construction of homeless shelters (*rein baseras).*

Table 6.8: Budget for Housing in Pune **(**Figures in INR Cr.)

Sub-sector	Programmes & Schemes	Allocating/ Implementing Agency	Actual Expenditure (2013-14)	Financial Allocation (2014-15)	Financial Allocation (2015-16)
Public Housing[81]	Includes allocations for slum development and rehabilitation; BSUP	MHADA; Slum removal and rehabilitation department, PMC	128.87	51.13	21.91
Women-specific Housing			0	0	0.25
Total for Housing (in INR)			**128.87**	**51.13**	**22.61**

Source: Estimated from the PMC Budget documents of 2014-15 & 2015-16.

The housing shortage, as calculated in Table 5.20, for the city is 75,917 DUs. As mentioned in Section 5.2.9 of this chapter, housing supply through various programmes has been only 7,752 DUs. Thus, housing supplied, through such programmes, is only 10.21 per cent of housing shortage which stands in sharp contrast with the fact that Pune has seen major real estate boom in past few years. In order to cater pending housing shortage, concerned authorities would need total of INR 1022.48 crores.[82]

6.2.4. Public Transportation

A. Bhopal

While BCLL is the sole agency in-charge of the implementation of BRTS project, running of city bus services, etc., BMC is receipt of the funds from the central and state governments for implementation of the JNNURM projects. It is to be noted that only public transportation modes have been taken into consideration here. Based on the current status of transportation in the city, the Table 6.9 includes two sub-sectors - footpaths & roads and buses/ BRTS.[83] In Bhopal, metro proposal is being considered by the BMC. It is evident from the table below that there is a sharp increase in the budgetary allocation for the transportation sector over the two years, primarily due to expansion of BRTS in the city and inclusion of new works under JNNURM (such as purchasing new buses for public transportation, bus stop signages, maintenance of public transport, etc.) as well as under the public works function (such as development of basic infrastructure for non-motorised transport, development of bus stands/ terminal, skywalks, cycle tracks, etc.).

For calculating per capita estimates reaching women under road infrastructure, it has been assumed that the thumb-rule of cost break-up for any road construction (including road, footpaths and streetlights on both sides of the road) is in proportion of 60:25:15. Also, our gender traffic counts showed that 21 per cent of the passengers are women (Refer Annexure 4 for details). Thus we assume that the costs incurred for road construction are shared in the proportion of 79:21 between men and women.

[81] This includes expenditures incurred by PMC under it budget slum removal and rehabilitation, expenditures as part of BSUP, and provisions made under 'L' budget.

[82] Assuming minimum cost of INR 1.5 lakhs per DU.

[83] Other sub-sectors such as metro/ intermediate public transport, etc. could be considered in case such facilities are provided by the city government.

While, in the BRTS passenger counts, 34.58 per cent of passengers were women (Refer Annexure 5 for details).

In terms of the coverage of footpaths in the city, wide footpaths were present only on the major roads, commercial areas etc. Thus based on observation, the satisfaction level among women for footpaths for the purpose of this study has been assumed to be 0.4. Whereas from the FGDs in the sample slum settlements and rapid assessment in the city, it was observed that though streetlights were present, but in many cases these were non-functional. Hence, satisfaction level of 0.3 among women for streetlights has been used.

Table 6.9: Financial allocations (in INR Cr.) and Benefit Incidence Analysis of Public Transport in Bhopal

Sub-sector	Programmes & Schemes	Allocating/ Implementing Agency	Actual Expenditure (2013-14)	Financial Allocation (2014-15)	Revised Allocation (2014-15)	Financial Allocation (2015-16)
Footpaths & Roads[84]	Include works under function of public works and JNNURM	BMC	24.13	75.96	65.20	109.07
Buses/BRTS[85]			65.24	29.03	36.89	136.31
Total for Transportation			**89.37**	**104.99**	**102.09**	**245.38**
Per capita estimate for footpaths and roads# (in INR) (A)			127.68	392.11	336.60	549.27
Per capita estimate for Buses/ BRTS# (in INR) (B)			345.24	149.86	190.43	686.45
Total Per capita estimate for Transportation (in INR)			**472.92**	**541.98**	**527.03**	**1,235.72**
Per capita estimate reaching women under roads (in INR) (C=A*0.6*0.21)			16.09	49.41	42.41	69.21
Per capita estimate reaching women under footpaths (in INR) (D=A*0.25*0.4)			12.77	39.21	33.66	54.93
Per capita estimate reaching women under streetlights (in INR) (E=A*0.15*0.3)			5.75	17.64	15.15	24.72
Per capita estimate reaching women under Buses/ BRTS (in INR) (F=B*0.35)			120.83	52.45	66.65	240.26
Total per capita estimate reaching women under Public Transportation (in INR) (G = C+D+E+F)			**155.44**	**158.72**	**157.87**	**389.11**

Notes:# These are obtained by dividing the actual expenditure (2013-14), financial and revised allocation (2014-15) and financial allocation (2015-16) with the population of the respective years. Using the population growth rate of 2001-11, population projections for the respective three years have been calculated which are as follows (i) For 2013-14 projected population is 1,889,644; (ii) For 2014-15 projected calculation is 1,937,086; and (iii) For 2015-16 projected population is 1,985,718.
Source: Estimated from the BMC Budget documents of 2014-15 & 2015-16.

B. Pune

Public transportation in Pune is provided by PMPML - a SPV set up by PCMC and PMC and covers most of Pune metropolitan region. PMPML has its own budget for revenue and capital expenditure. However due to unavailability of required data, the

[84] Includes expenditures incurred for construction of footpaths, laying street-lighting, pedestrian crossings, foot-over bridges.

[85] Includes expenditures incurred for purchasing of buses, implementation of BRTS project under JNNURM, construction of bus stands/stops/ bus terminal/ depot in different parts of city and public bicycle sharing scheme.

following table includes only expenditures as budgeted by PMC including transport expenditure incurred under JNNURM (construction of BRTS corridors and buying of new buses), expenditures under urban transport fund and road department.

Table 6.10 shows that although there has been a decline in budgetary expenditures/ allocations by the concerned authorities in 2014-15, these have subsequently increased in the last fiscal year (2015-16). Thus, more investments are being undertaken which would also benefit women.

For the following section, the satisfaction level for footpaths has been assumed to be 0.5 and 0.8 for streetlights.[86] Under costs incurred for road construction, the thumb-rule of cost break-up for road, footpath and streetlights (on both sides of the road) is 60:25:15, based on which total expenditure for roads, footpaths and streetlights have been derived.

Following four major road intersections – (i) Khanduji Baba Chowk; (ii) Nal Stop; (iii) RTO; and (iv) Shimla Office were selected. It was evident from the gender traffic counts at the major road intersections that majority of the passengers were males, we assume that the costs incurred for road construction are shared in the proportion of 82:18 between men and women. Following four bus stands were selected for conducting passenger counts disaggregated by gender – (i) Sasoon Hospital; (ii) Shimla Office; (iii) Deccan Corner/ Khanduji Baba Chowk; and (iv) SNDT. Through gender passenger counts at the bus stands, it was found that 36 per cent of passengers are women (Refer Annexure 10 for details).

Table 6.10: Financial allocations **(**in INR Cr.) and Benefit Incidence Analysis of Public Transport in Pune

Sub-sector	Programmes & Schemes	Allocating/ Implementing Agency	Actual Expenditure (2013-14)	Financial Allocation (2014-15)	Financial Allocation (2015-16)
Footpaths & Roads[87]	Include works under operation of city bus service public transport and special schemes, road department and JNNURM	PMPML, road department, PMC	338.5	557.81	585.16
Buses/BRTS[88]			217.03	224.37	241.87
Total for Transportation			**555.53**	**782.18**	**827.03**
Per capita estimate for footpaths and roads# (in INR) (A)			1,058.39	1,704.75	1,747.99
Per capita estimate for Buses# (in INR) (B)			678.59	685.71	722.50
Total per capita estimate for Transportation (in INR) (C)			**1,736.98**	**2,390.46**	**2,470.45**
Per capita estimate reaching women under roads (A*0.6*0.18) (D)			114.31	184.11	188.78

[86] While footpaths in the city were present on the major roads, commercial areas etc. they were not user friendly, due to the presence of street lights, bus stands, trees, parked vehicles, vendors etc.; streetlight were present in all settlements and were in most cases functional.

[87] Includes expenditures incurred for construction of footpaths, laying of street-lighting, pedestrian crossings, foot-over bridges.

[88] Includes expenditures incurred for purchasing of buses, implementation of BRTS project under JNNURM, construction of bus stands/stops/bus terminal/depot in different parts of city and public bicycle sharing scheme.

Per capita estimate reaching women under footpaths (A*0.25*0.5) (E)	132.30	213.09	218.50
Per capita estimate reaching women under streetlights (A*0.15*0.8) (F)	127.01	204.57	209.76
Per capita estimate reaching women under Buses (B* 0.36) (G)	244.29	246.86	260.10
Total per capita estimate reaching women under Public Transportation (H= D+E+F+G)	**617.90**	**848.63**	**877.14**

Notes: # These are obtained by dividing the actual expenditure (2013-14), financial allocation (2014-15) and allocation (2015-16) with the population of the respective years. Using the population growth rate of 2001-11, population projections for the respective three years have been calculated which are as follows (i) For 2013-14 projected population is 3,198,248; (ii) For 2014-15 projected calculation is 3,272,077; and (iii) For 2015-16 projected population is 3,347,610.
Source: Estimated from the PMC Budget documents of 2014-15 & 2015-16.

In the above table, BIA has been calculated based on the above mentioned assumptions. The total per capita estimate reaching women for the three years has been more of less constant at 35 per cent, indicating that women only receive 35 per cent of per capita benefit.

6.3. Comparative Analysis of Bhopal and Pune

For the two case study cites – Bhopal, Madhya Pradesh and Pune, Maharashtra – keeping in mind the time constraints, FGDs were conducted in settlements across the city, where respondents were asked regarding the provision and access to water, sanitation, housing and transport. Table 6.11 below gives a summary of the findings from primary data collected from both cities.

Table 6.11: Comparative Summary of Sub-sectors across Bhopal and Pune

Sub-sector	Indicator	Parameters	Bhopal	Pune
Water Supply				
Water Supply	Coverage of piped water supply	% of HH covered	67 %	94 %
	Service timing	Duration	30 to 90 minutes	24hrs to 4 hrs
	Quality	Potable (y/ n)	No - Small-sized impurities, foul smell	Yes
		If non-potable, why?		
	Pressure	Low/ High	Low/ Medium	Low to medium
Sanitation				
SWM	Door-to-door collection	Door-to-door collection	Yes	Yes
		% HH covered	25 %	52.70 %
		Frequency of collection	Daily	Daily
	Community collection	Public disposal bin/ collection site	Yes	Yes
		Frequency of collection	Twice/ thrice in a week	Daily to one week
Sewage	Household toilets	% HH with toilets	Only 20 % sample slums	97.60 % (CSP)
		Connection to sewer lines	10.40 %	All
		Sewer lines covered (y/ n)	No.	Yes
	Community toilets	Community toilets (y/ n)	Yes	Yes
		Maintenance of community toilets (y/ n)	No – in most cases residents hired cleaners	Medium to low

			themselves	
		Safety of community toilets	No	Yes, in some settlements
	Open defecation	Open defecation	Yes	No
Storm Water Drainage	Coverage	Coverage of storm water drainage (y/ n)	50 %	55 %
Housing				
Slum/Informal Settlements	Security of land tenure	Ownership of land (government/ private/ other)	Government/ private	Government and private
	Upgrading	Slum upgrading schemes (y/ n)	Yes	Yes, SRS and BSUP
Public Housing	Provision of public housing	Subsidies in beneficiary contributions for women-headed HH	No	NA
		Quality of construction (satisfaction level of female residents)	Ad-hoc and faulty planning, absence of water supply pipes, blocked sewage lines, lack of solid waste disposal system, improper electrification and location of transformers etc.	Quality of construction and design are poor, and site layouts dangerous on BSUP sites
		Availability of infrastructure facilities (community hall/ temple/ mosque, open spaces, street lighting, childcare/ creche)	Around 4 BSUP sites are located in peripheral areas. During site planning none of the DPRs had planned for infrastructure facilities	Basic services are provided but not adequate and infrastructure of poor quality on BSUP sites
Women-Specific Housing	Working women hostel	Availability of beds (%)	No budgetary expenditures/ allocations have been made by BMC for this head	No details available in budgetary documents of PMC
	Homeless shelters	Availability of beds for women (%)	Place for women found in permanent shelters but not in temporary shelters	
Public transport				
Footpaths & Roads	Walkable footpaths	1.5 m width	Present only on major roads/ commercial areas	Yes
	Street lighting	Presence of street lights (y/ n)	Present only on major roads/ commercial areas.	Yes
	Traffic signals	Signalization (y/ n)	Yes	Yes
		Zebra crossing (y/ n)	Yes	Yes, Low
	Foot-over bridges	Presence (overhead or underground) (y/ n)	Yes - Newly constructed ones had escalators as	Yes

			well as on-site security guards	
		Presence of functioning lighting (y/ n)	Yes	NA
Buses/ BRTS	Bus stand	Presence of bus shelter (covered/uncovered) (y/ n)	Covered as well as uncovered.	Covered
		Presence of lighting at bus shelter (y/ n)	No – Non-functional in many	Street Lights
		Presence of display systems/ maps/ signage (y/ n)	Neither display systems were working, no maps or signage's present	Yes
	Buses	Presence of organized public transport in urban area (%)	22.19 %	100 %
		Number of buses per 1000 population	0.12	25 buses per lakh population
		Seats gender segregated (y/ n)	Yes	Yes
		Availability of travel subsidies for women (y/ n)	Nil	No
		Presence of operational interior lights on board bus (y/ n)	Yes	Yes
		Number of female harassment cases registered	More than 36,000 complaints were reported from the state in a span of 11 months, after launch in January, 2013 and maximum number of complaints were filed from Bhopal.	565 complaints received in 2013 on women's helpline number DNA (2013).
	Gender sensitivity among driver-conductor	Presence of training programmes (y/ n)	Yes – In collaboration with Sangini (a local NGO) and Police department	Female bus conductors are present.
		Grievance redressal facility (y/n)	Yes – Women helpline number (1090) is displayed in buses	Yes (See DNA 2013)
	Usage	Passenger count (% women passengers)	34.58 %	36.25 %

In the two case study cities – Bhopal and Pune, it was evident that although both cities had undertaken many infrastructure projects recently in three of the selected sub-sectors (i.e. water supply, sanitation and public transportation), the extent of benefit accruing to women differed in both, with Pune having a better service coverage as compared to Bhopal. This was clearly visible through primary data collection (FGDs/ rapid assessment in the sample slum settlements), secondary data (SLBs of the selected sub-sectors) and BIA. This can be attributed to higher per capita expenditures available in Pune than in Bhopal.

During the FGDs/ rapid assessment in the slum settlements in both cities, settlements in Pune had access to piped water supply at individual household-level, *pucca* and covered drainage network, paved roads, streetlights, *anganwadis* within/ in vicinity and other infrastructure facilities, etc., to a large extent in comparison to settlements in Bhopal wherein most of slum settlements had access to water supply either through community taps/ water tankers (sporadic timings), open and *katcha* drainage network (in most cases, residents were depended on the topographical terrains on which the settlements were located), waste disposal in available open spaces etc. Though problems were present in the operation and maintenance of the infrastructure facilities present in Pune, situation grossly differed in Bhopal where residents of the slum settlements, commonly, complained "*suvidha ho toh bataye*" (if facility is available, then only we can tell about it). While in Pune, as one resident at Lohiya Nagar stated "*humare pass saari suvidha toh hai, par vo thik se nahi chal rahi"* (We have all services but they do not work properly). In Pune, from FGDs it was evident that in all sample slum settlements, basic urban services were largely in place. Most of settlements had access to basic urban services such as water, sanitation, SWM, sewerage, toilet and public transportation.

Even, the satisfaction levels, across the four sub-sectors, in Pune were found to be on a higher range in comparison to Bhopal. Table 6.12 below shows a comparative summary of BIA in Bhopal and Pune.

Table 6.12: Benefit Incidence Analysis Summary of Bhopal and Pune

Sub-sector	Bhopal			Pune		
	Per capita estimate for 2015-16 (in INR)	Per capita estimate reaching women 2015-16 (in INR)	% of per capita estimate reaching women	Per capita estimate for 2015-16 (in INR)	Per capita estimate reaching women 2015-16 (in INR)	% of per capita estimate reaching women
Water Supply	**1,289**	**644.33**	**50**	**1,496.88**	**1,197.50**	**80**
Sanitation	**958.29**	**386.12**	**40.29**	**1367.57**	**847.40**	**61.97**
SWM	813.41	325.36	40	350.51	210.31	60
Sewage	105.91	52.96	50	663.94	531.15	79.99
Storm Water Drainage	38.98	7.80	20	353.12	105.94	30
Transport	**1,235.72**	**389.11**	**31.49**	**2,470.45**	**877.14**	**35.51**
Footpaths & Roads	549.27	319.91	27.10	1,747.99	617.04	35.30
Buses/ BRTS	686.45	389.11	35	722.50	260.10	36
Total of sub-sectors	**3483.01**	**1419.56**	**40.75**	**5334.90**	**2922.04**	**54.77**

It is clear that in both of the two case study cities only women receive only partial benefit of the total expenditure. In the selected four sub-sectors, except for housing, the extent of benefits reaching out to women in sub-sectors water supply, sanitation and transportation were found to be higher in Pune as compared to Bhopal.

While under public transportation, both cities have equal range of figures regarding the extent of benefits accruing to women. However, infrastructure facilities such as walkable footpaths and functional streetlights in Pune were observed more user-friendly as compared to Bhopal (mostly present on major roads/ commercial areas). Though not much stark differences have emerged from the gender counts at road intersections and BRTS/ bus stand counts in both cities; but during the survey, more female drivers (on two-wheelers and cars) were observed in Pune as compared to Bhopal. It was also observed during the traffic counts at road intersections and bus passenger counts, conducted, in both cities, number of women were seen in buses and on roads during the noon time were more as compared to morning and evening.

Table 6.13: Comparative Summary of Housing Shortage and Supply in Bhopal and Pune

	Bhopal	Pune
Housing shortage (DUs)	43,205	75,917
Housing supply (DUs)	14,603	7,752
% of housing shortage being met	34.00	10.21

Whereas in case of housing, the extent to which housing shortage is being met by housing supply in Bhopal is more in comparison to Pune (34 per cent vs. 10.21 per cent). This is attributed largely due to implementation of SRS projects in Pune, which are driven by funds from the private sector (developers/ builders). Implementation of such schemes was found to be absent in Bhopal; hence the city largely depends on funds from central/ state government programmes to cater to its housing needs.

Based on the findings in these two case study cities, the next chapter includes key recommendations/ suggestions for governments (at any tier), policy makers, etc., for improving urban services, so that larger benefits accrue to women.

7. Conclusions and Recommendations

7.1 Structural Limitations of GRB

Gender equity in the urban development sector is necessary given that India is expected to urbanize rapidly in the coming decades. The current urbanization rate of 2.82 per cent per annum (2001-11 urban population growth rate) is although low, is an improvement from the previous decade, as for the first time, rural to urban migration is driving the urbanization process. This trend is expected to continue with the expected high rate of economic growth. However, the present urban development processes are exclusionary, excluding the poor, the new migrants and among them the women.

The first major reason for the exclusion is lack of access to urban land for housing purposes. Housing exclusion is the beginning of all other exclusions. Women, in particular, consider housing to be their major asset as it gives them security against evictions, protection against nature and societal violence, if they co-own/ own the house then it reduces their vulnerability in times of marital discord, it provides them access to basic services and that reduces their burden of collecting water and protects them from defecating in the open, and lastly, it gives them dignity (Mahadevia 2015a). But, the market driven housing delivery system excludes those without affordability to own a legal house, leading to urban poor finding house in the informal sector (Mahadevia 2009). Herein, if tenure security is extended, the quality of life of the urban poor improves and as argued earlier, benefit women more than men of these households (Mahadevia 2011b). Lack of tenure security has potential to push household below the poverty line.

Urban governance, inspite of the 74th CAA, has not yet become participatory, as in most cities, the ward committees have not been constituted and Community Participation Law, although enacted, has not been implemented (Mahadevia 2010). Hence, local planning approaches, wherein engendering could occur, have not yet been put in motion. Under the 74th CAA, ward budgets could have provided opportunities to undertake participatory budgetary exercises, wherein GRB could have been institutionalised. There is a need to promote participatory budget exercises at the ward level to ensure that services that benefit women would get financial allocation.

The third major aspect of urban planning that requires strong gender dimension is transport. Transport is largely seen as technical subject. On the contrary, transport has strong social dimension and also gender dimension (Mahadevia 2015b). This realisation of need for gender inclusiveness in transport planning is getting recognition, although, transport planning continues to be gender-neutral. Worse, transport planning continues to address to the needs of individual private motorised transport to the neglect of public transport and walking infrastructure that women

need for their mobility. This GRB exercise has been undertaken under these existing conditions of structural inequalities adversely affecting women of the low income households in particular.

GRB exercise is also limited by the fact that the ULBs are financially constrained. The ULBs do not have their own sources of finance and are largely dependent on the state governments to finance even their current expenditures. Their only revenue source is property tax, which at best, is about 20 per cent of its total income. For capital expenses, the ULBs are dependent on the state government and since the JNNURM on the Additional Central Assistance (ACA) from the national government. ACA requires that the state government and the ULBs put in their matching resources. Thus, only financially strong states and the ULBs have been able to lift JNNURM funds (Mahadevia 2010, 2011a). Secondly, in many states, the state government provides many of the services, for example, in case of Bhopal in this study in contrast to Pune wherein all the services are provided by the ULB. This is another structural limitation of this GRB study.

Any GRB analysis relies heavily on the availability of data, which proves to be an obstacle in the Indian context. Apart from the lack of gender disaggregated data with government departments, access to data itself can prove to be difficult. As in many instances, it is not readily available in the public domain. Further, accounting practices are not uniform across the three tiers of the government, between states and even across different cities with a state. In particular, the accounting practices at the ULB level are different in each of the state. As a result collecting the data required for gender sensitive analysis of budgets may prove to be a challenge. This, problem can only be structurally addressed, by altering the manner in which government data are kept.

7.2 Approach to GRB in Urban Sector

There has been a growing realization within the country to address gender needs in various sectors, especially in the urban areas. After all, we cannot ignore the fact that according to the statistics of Census 2011, the 58.7 crore women and girls in India account for 48.5 per cent of the total population of the country. Introducing GBS/ setting up of GBCs/ capacity building workshops to orient government officials at the three tiers/ having separate budgets for women at city-level etc., are some of the noteworthy initiatives being taken up in different parts/ at different tiers of the government. However, attempt to mainstream gender into government budget and economic management policies needs a more robust GRB analysis. Against this backdrop, this study aims to conduct a sector – urban development – specific analysis.

This study draws from the ‘gender needs framework’, which classifies all interventions as addressing practical and strategic gender needs. This framework as - against the more commonly used framework suggested by Ronda Sharp which does not directly apply to the selected sectors or the South African five-step model as both

exceeded the scope of this study. This study was developed keeping in the mind the structure of urban development in India. The four sub-sectors of water, sanitation, housing and public transportation may seem gender neutral in budget documents, but have an implicit gender dimension to them. By classifying each intervention as addressing practical or strategic gender needs, a GRB analysis can more effectively capture the elusive qualitative dimensions of sexual division of labour within households. As mentioned before, government expenditure may not necessarily translate into immediate benefits; this study has proceeded by assessing infrastructure services being provided, their performance, by scrutinising budgetary allocations against the benefits women receive, and listing order of priority of services as different for men and women. Thereby, allowing a more substantive analysis of what budget may mean for men and women in water, sanitation, housing and transport sub-sectors.

Further, a GRB analysis also requires vast primary data, ensuring that heterogeneity of various groups across caste, class, age, ethnicity, region, etc., are adequately reflected. This is also for the reason that gender is a socially constructed entity and that gender analysis reflects all social inequities of any society. For this analysis, the data has been collected using FGDs due to time constraint. But, for a full GRB, primary surveys have to be conducted, as it has been mentioned in the methodology. Of all the methods available, we have used Benefit Incidence Analysis to assess the extent of public expenditure reaching women.

7.3 Benefit Incidence Analysis Findings

In BIA of budgetary expenditures/ allocations (See Table 6.12: Benefit Incidence Analysis Summary of Bhopal and Pune), it is clear that in both of the two case study cities only partial benefit reaches women, i.e. of the total expenditure per person, only a fraction benefits women, primarily on account of either the service not available to the satisfaction of women or service not used by women at all. This means that due to gendered division of labour within households, women have to bear burden of the deficit in the services.

In the selected four sub-sectors, except for housing, the extent of benefits reaching out to women in sub-sectors water supply, sanitation and public transportation were found to be higher in Pune as compared to Bhopal, since, both, per capita expenditure and satisfaction level among women were higher in case of Pune. For example, under water supply, around 80 per cent of the budgetary expenditures/ allocations reached women in Pune whereas in Bhopal, this was around 50 per cent only. **In other words, if the per capita expenditures on services are higher, the benefits accruing to women are higher.** Low levels of expenditures mean poor quality services and women tend to have lower level of benefits.

BIA conducted as part of this study, reveals that women are receiving only a small per cent of benefits. Thus, it is required that the public authorities should provide these

services more efficiently and adequately. By provision of services that covers the entire expanse of the city, are adequate, would mean that both men and women will benefit equally. Further, the services we have listed cater to practical as well as strategic gender needs. Thus, it is important for city government to increase their expenditures for these infrastructure sectors, such as water supply, sanitation, housing, etc., since they translate into direct benefits to women upon universal coverage, adequacy and efficiency of these services.

7.4 Recommendations

This brings us to the question put forward in Chapter two: *If the coverage of services is low, will women be at more disadvantage than men as compared to a situation wherein there is universal coverage*. In both cities, Bhopal and Pune, although the service coverage was not full, it was found to be higher in case of Pune. Thus, if the coverage of services improves, women stand to benefit more than men.

During the prioritization exercises, there was a demand for home-based work by women in Pune. This clearly indicates that women are bound by their reproductive and productive roles that hinder their access to opportunities outside homes. Any intervention in provision of basics services, ensuring adequate and sufficient provision, promotes practical gender needs and has transformatory potential to promote strategic gender needs also, by allowing women more time and access to economic opportunities outside their homes, alleviating burden of domestic labour in case of water and sanitation, increasing their access to opportunities across the city in case of transportation, ensuring adequate housing security of tenure and ownership and empowering women.

The budgeting process, as currently practiced, can tend to be gender blind and are shaped by the experiences of men. The prioritization exercises, conducted in the course of this study, clearly capture the different priorities of men and women. These priorities need to be identified before any budgeting and policy making processes and be reflected on, and incorporated in these processes. While functions of ULBs – in terms of provision of basic services – need to be strengthened, there is also a requirement to ensure women's participation in the budgeting process. To ensure that differentiated priorities of women are being reflected and implemented through ULB's budget, conducting gender audits should be made mandatory for city governments – this would also act as a means of evaluating how gender-responsive the budgets of ULBs are.

Equally important, these differentiated priorities need to be woven into the current policies and programmes that are under the gambit of state and central governments. Analysis of the current schemes/ policies (as far as JNNURM/ NUTP were concerned) being undertaken in Urban Development do reflect lacunae of gender perspective, both, at levels of policy formulation as well as implementation. With recent schemes – AMRUT, PMAY, etc., policy guidelines do suggest that the

outcomes of urban infrastructure projects (to be undertaken under these) would benefit women; however, the outcomes are yet to seen in future.

In this respect, though budgets may have a lot to offer as an agenda seeking to promote gender equality, this can only be achieved provided that women are engaged meaningfully and represented politically in governments and their activities. There is a need to revisit 74th CAA and move towards decentralised and participatory budget-making and monitoring exercise at the city level.

Annexures

Annexure 1: Calculation of Congestion factor BMC, 2011.

Congestion factor is calculated based on assumption that each married couple will require an exclusive room to themselves. The numbers in the table below are from Census 2011 for BMC. The numbers in the bracket are the couples requiring separate room.

Congestion in Households (BMC - 2011)							
Number of married couples	**Number of Households having:**						**Total married couples requiring separate room**
	No exclusive room	**one**	**two**	**three**	**four**	**five**	
1	(1) X2676						**2,676**
2	(2) x407	(1) x4862					**5,676**
3	(3) x100	(2) x393	(1) x1320				**2,406**
4	(4) x20	(3) x59	(2) x160	(1) x246			**823**
5+	(5) x10	(4) x9	(3) x37	(2) x54	(1) x70	(1) x48	**423**
Total married couples requiring separate room							**12,004**

Annexure 2: Details of FGDs conducted in 12 Settlements, Bhopal.

Settlement No.	1		2		3		4		5		6	
Name of Settlement	**100 Quarters**		**Shyam Nagar**		**Banjari Basti**		**Saraswati Nagar**		**Purana Nagar**		**Banjara Basti**	
	M	**F**	**M**	**F**	**M**	**F**	**M**	**F**	M	F	M	F
Total population in settlement	2,169		1,347				701		1,700			
WATER												
Availability of piped water supply ('Y' for Yes/ 'N' for No)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y
If Yes - Household level/ Common community tap	Community tap	Community tap	Household tap/ Tank above building	Household tap/ Tank above building	Hand-pumps as well as Tankers	Hand-pumps as well as Tankers	Hand-pumps as well as Tankers	Hand-pumps as well as Tankers	Community taps	Community taps		2 water tank of 5000 litres capacity each installed by ward councillor but only one is functional
Duration of supply (in hrs/ mins)	30min	30min	20-25 min for tank to fill	20-25 min for tank to fill	20-25 min	20-25 min	20-25 min once tanker in three days	20-25 min once tanker in three days	1.5 - 2 hrs (in morning)	1.5 - 2 hrs (in morning)	Conducting FGD with men was not feasible here	4 hours every day. Each HH fill around 3-4 buckets every alternate day)
Pressure (Low/ Medium/ High)	Low	Low	Medium	Medium	Low	Low	Low	Low	Medium	Low		Medium
Quality of water - Potable ('Y' for Yes/ 'N' for No)	Y	Y	Y	Y	Y	Y	Y	Y	N - red bugs are found in water and deposit of particles found at bottom of vessels, contamination of water in the under-ground tank as sewage water seeps into the tank			N (many times they use stale stored water, water tank is not cleaned regularly)
Satisfaction level with respect to quality and quantity of the water supply (1-5, with 5 most satisfied)	4	4	3	3	3	3	2	2	3	3 – Comes daily		2
SANITATION												
Per cent of HH with toilets	in about 500 HH		Almost in all *pucca* hutments		Can't say	Can't say	None	None	None	None		None
Presence of community toilets ('Y' for Yes / 'N' for No)	N	N			N	N	Y	Y	Y	Y		
Maintenance of community toilets ('Y' for Yes / 'N' for No)	Y	Y			N	N	Y	Y	Y - by themselves	Y - by themselves		
Safety of community toilets ('Y' for Yes/ 'N' for No)	N	N	N	N	N	N	Y	Y	Usable	No doors/ latches; outsiders also use community toilets; insufficient seats	Conducting FGD with men was not feasible here	N
Open Defecation ('Y' for Yes/ 'N' for No)	N	N	N	N	Y	Y	Y	Y	Y	Y		Y (near the quarry)
Presence of Sewerage line ('Y' for Yes/ 'N' for No)	Y	Y	Y	Y			Y	Y	Y	Y		
If Yes - Closed/ Semi-covered/ Open network	Semi-covered	Semi covered	Open	Open			Open	Open	Semi-covered	Semi-covered		N
Frequency of blockage of sewerage lines	-	-	in 15 days	in 15 days	N	N	Can't say	Can't say	-	-		-
Satisfaction level with respect to its working (1-5 with 5 most satisfied)	2	2	3	3	1	1	1	1	2	2		0
DRAINAGE												
Presence of storm water drains in the settlement ('Y' for Yes/ 'N' for No)	Y	Y			Y	Y	N	N	N	N		N
If No, how frequently did the settlement get flooded last year	Can't say (25%)	Can't say			Can't say	Can't say			Every year, the settlement gets flooded	Every year, the settlement gets flooded	Conducting FGD with men was not feasible here	Settlement is located on uphill - rainwater flows downhill into the quarry
How many days/ how long does it takes for water to drain-off		Can't say			Can't say	Can't say	Every time after heavy rainfall		2-3 days	2-3 days		
SOLID WASTE MANAGEMENT												
Presence of solid waste disposal facility ('Y' for Yes/ 'N' for No)	N	N	Y	Y	Y	Y	N	N	Community bin present earlier - now removed	Throw it in open space at entry of the settlement	Conducting FGD with men was not feasible here	N - dumped downhill/ refuse is burnt

If yes, whether door-to-door or community bin			Door-to Door	Door-to Door	Community bin	Community bin	Common place	Common place	Common place	Common place		
Frequency of picking it up			Everyday	Everyday	Everyday	Everyday			Every-day (stopped since 1 month)	Every-day (stopped since 1 month)		
Satisfaction level with respect to picking up of solid waste from the settlement (with 5 most satisfied)	1	1	2	2	3	3	2	2	2	1		0
TRANSPORT & OTHER FACILITIES												
Roads within the settlement (Fully/ Partly/ Uncovered)	Partly	Partly	Paved but every now and then drainage/ sewage work goes on		Partly	Partly	Partly	Partly	Fully	Fully	Conducting FGD with men was not feasible here	
how much of settlement covered	30%	30%			Partly	Partly						
Paved ('Y' for Yes/ 'N' for No)	Y	Y	Y	Y	Partly	Partly	No	No	Y	Y		N - only approach road is paved
Presence of street lights ('Y' for Yes/ 'N' for No)	N	N	Y – Dysfunctional	Y – Dysfunctional	Y – Dysfunctional	Y – Dysfunctional	Y	Y	N	N		N
Use of City bus service/ BRTS/ Private transport	Y	Y	City bus/ BRTS	City bus/ BRTS	City bus/ BRTS	City bus/ BRTS	City bus/ BRTS	City bus/ BRTS	City bus/ Tata Magics (preferable)			Tata Magics
Location of nearest bus stand			Bittan market	Bittan market	Kolar	Kolar	across the road	across the road	Govindpura (1 km away from the settlement)			No bus stand located nearby
Proximity of health care facility, school	1 km	1 km	0.5 km		3 km	3 km	very near	very near	• Private health care nearby • *Anganwadi* in the settlement is taken on rent in a hutment; • No dedicated open spaces for children to play; • Government school for girls (1 km away from settlement); while boys go to private schools mostly.			• No PHC located nearby - people go to Anand Nagar/ private clinics; • *Anganwadi* and school located in settlement; • No community hall

Contd.

Settlement No.	7		8		9		10		11		12	
Name of Settlement	**Gautam Nagar**		**P.C.Nagar**		**Gareeb Nagar (Near Chola Railway Crossing**		**Gondh Basti (Near New Central Jail)**		**Hinotiya Alam - 610 Jhuggi**		**Baba Nagar 2**	
	M	F	M	F	M	F	M	F	M	F	M	F
Total population in settlement			601		202		1,353				2,654	
WATER												
Availability of piped water supply ('Y' for Yes/ 'N' for No)	Y		N		Y	Y		Y			Y	Y
If Yes - Household level/ Common community tap	2 community taps within the settlement		Water tankers come once in 3/4 days in a week.		Household-level individual tap	Household-level individual tap	Conducting FGD with men was not feasible here	Water tankers (2-3 times in a week) and 2 hand-pumps are present	N - Water tankers from BMC supply water every alternate day in the week		5-6 common community taps	5-6 common community taps
Duration of supply (in hrs/ mins)	Approx. 1 hr in a day				around 60 min	30 min			It hardly stands for 10 min	Depends on the queue	1 - 2 hours	1 - 2 hours
Pressure (Low/ Medium/ High)	Low pressure in summers				Medium	Medium		Medium in hand-pumps	-	-	Low - located uphill	Low - located uphill
Quality of water - Potable ('Y' for Yes/ 'N' for No)	Y - For initial 10 minutes, water quality is poor (foul smell and yellowish in colour)		Y		N (For initial 10 min, there is lot of foul smell in the water, also lot of particles are present - They use water after sieving)			Y	Y	Y	Y	N - lot of particles present in water
Satisfaction level with respect to quality and quantity of the water supply (1-5, with 5 most satisfied)	2		1		4	3		4	0	2 - Not everyone gets adequate supply of water. Lot of fights over filling water	3	2

SANITATION											
Per cent of HH with toilets	None	Conducting FGD with men was not feasible here	Only few HH have individual toilets.		50% have individual toilets	Conducting FGD with men was not feasible here	50 % HH in the settlement have individual toilets	All households have individual toilets	All households have individual toilets	N	N
Presence of community toilets ('Y' for Yes/ 'N' for No)	Y									Y	Y
Maintenance of community toilets ('Y' for Yes/ 'N' for No)	Y - In case drains get choked, they are cleaned within 2-3 days									N	N
Safety of community toilets ('Y' for Yes/ 'N' for No)	Y		N	N	N		N	N	N	N	N
Open Defecation ('Y' for Yes/ 'N' for No)	Y (Still persists in spite of the pay and use community toilet - around 6 seats for men and 1 seat for women)		Y	Y	Y		Y	N	N	Y	Y
Presence of Sewerage line ('Y' for Yes/ 'N' for No)			Y	Y	Y		Y	Y	Y	Y - *Katcha*	Y - *Katcha*
If Yes - Closed/ Semi-covered/ Open network			Semi-covered	Semi-covered	Semi-covered		Semi-covered	Closed	Closed	Semi-covered	Semi-covered
Frequency of blockage of sewerage lines	N		Can't say	Can't say	Can't say		Never cleaned	Choked every month	Choked every month - Clogging of sewage water at various places		
Satisfaction level with respect to its working (1-5 with 5 most satisfied)	0		2	3	3		2	1	2	2	2
DRAINAGE											
Presence of storm water drains in the settlement ('Y' for Yes/ 'N' for No)	N - Only the approach road has *katcha* open drain	Conducting FGD with men was not feasible here	Y - An open drain is flows through the settlement	N	N	Conducting FGD with men was not feasible here	Y - An open *nalah* flows along the edge of the settlement	N	N	N	N
If No, how frequently did the settlement get flooded last year	Settlement got flooded every time during heavy showers		Still the settlement is prone to water-logging	5-6 times	Depending upon the rainfall		Almost every time it rains , as water from up-hill flows down	Depends on the rainfall	Depends on the rainfall	Water drains off easily	*Khadan* and canal get flooded
How many days/ how long does it takes for water to drain-off	1-2 hrs		It takes two days for water to run-off	It takes 2 - 3 hours for water to run-off	It takes 2 - 3 hours for water to run-off		It takes one hour for water to run-off	It takes 1-2 days for water to drain off	It takes 1-2 days for water to drain off		
SOLID WASTE MANAGEMENT											
Presence of solid waste disposal facility ('Y' for Yes/ 'N' for No)	N - dumped across the open spaces across the road	Conducting FGD with men was not feasible here	N - residents throw waste in open drain/ *khadan*. No community bins are provided	N - Throw it in *khadan* behind the settlement	N - Throw it in *khadan* behind the settlement	Conducting FGD with men was not feasible here	Y	N - people throw waste in the private vacant plot near the settlement	N - people throw waste in the private vacant plot near the settlement	N - people throw waste in the *khadan*/ canal adjoining the approach road of the settlement	N - people throw waste in the *khadan*/ canal adjoining the approach road of the settlement
If yes, whether door-to-door or community bin							Community bins				
Frequency of picking it up							Once in week/ fortnight				
Satisfaction level with respect to picking up of solid waste from the settlement (with 5 most satisfied)	0		1	0	0		2	0	0	0	0
TRANSPORT & OTHER FACILITIES											
Roads within the settlement (Fully/ Partly/ Uncovered)	Only approach road present	Conducting FGD with men was not feasible here	Full	Full	Full	Conducting FGD with men was not feasible here	Partly	Partly	Partly	Full	Full
How much of settlement covered			Full	Full settlement is covered	Full		Full	Partially	Partially	Full	Full
Paved ('Y' for Yes/ 'N' for No)	N - *katcha*		Y	Y	Y		Semi-*pucca*	Partially paved	Partially paved	N - Internal roads dug for	N - Internal roads were dug

										laying Narmada water pipelines in the settlement	for laying Narmada water pipelines in settlement
Presence of street lights ('Y' for Yes/ 'N' for No)	Y - only along the approach road		Y	N	N		N	Y - Dysfunctional	Y - Dysfunctional	Y - but unfunctional	Y - but unfunctional
Use of City bus service/ BRTS/ Private transport	City bus/ BRTS/ Tata Magic		City bus service/ Tata Magic	Tata Magic/ six-seater rickshaws	Tata Magic/ six-seater rickshaws		City bus service/ Tata Magic	City bus service / Tata Magic	City bus service / Tata Magic	City bus service/ Tata Magic	City bus service/ Tata Magic
Location of nearest bus stand	Across the road		Nearest bus stand at 12 No., Naka, Sai Board (located 1.5 km away from settlement)	Near 80 foot ring road (5 km away from settlement)	Near 80 foot ring road (5 km away from settlement)		Near the bypass (around 1.5 km from the settlement)	2 km away from settlement	2 km away from settlement	Around 1.5 km away from settlement	Around 1.5 / 2 km away from the settlement
Proximity of health care facility, school	• Nearest PHCs are located at Anna Nagar/ Habibganj Naka; • *Anganwadi/ balwadi* - rented in a hutment; • No community hall/ open space for children.		• No PHC / community hall/ open spaces. • School is located at a distance of 2 km (in 10 No.). • *Anganwadi* is located in 12 No. slum settlement but children do not prefer to go.	• No PHC located nearby. People go to Bhopal hospital. • *Anganwadi* is present in the settlement. • Private school upto 5th standard is located nearby. • Government school is located far off.		Conducting FGD with men was not feasible here	• Nearest PHC is located at Gandhinagar. • A government school (upto 5th standard) is located near the New Jail. After which, children go to the government school in Gandhinagar	• Nearest healthcare service is located 3 km away from the settlement. • There are 2 *anganwadis*, a government school and private school located in/ vicinity of the settlement. • No community hall/ dedicated open spaces within the settlement		• Nearest health care facility is Bansal hospital - 1.5- 2 km away from settlement. • *Anganwadi* is located in Baba Nagar 1 (located downhill) - all children go there. • Nearest government school is located at Rajapur. • No community hall/ dedicated open space for children in the settlement	

Annexure 3: Prioritization of services in 12 Settlements, Bhopal.

Settlement No.	1		2		3		4		5		6	
Name of Settlement	**100 Quarters**		**Shyam Nagar**		**Banjari Basti**		**Saraswati Nagar**		**Purana Nagar**		**Banjara Basti**	
	M	**F**	**M**	**F**	**M**	**F**	**M**	**F**	M	F	M	F
Total population in settlement	2,169						701		1,700			
Prioritization of services	1. Water to every household	1. Solid waste disposal	**1**.Water supply	1. Solid waste management	1. Electricity	1. Toilet facility	**1**.Water	1. Toilet	1. Individual toilet in every household	1. Individual toilet in every household	Conducting FGD with men was not feasible here	1. Toilet facility to every HH
	2. Light	2. Toilet in every household	2. Sewage network	2. Regular cleaning of sewage lines	2. Water	2. Water	2. Playground for children	2. Water	2. Proper voltage of electricity	2. Street-lights		2. Individual piped water supply at household level
	3. Individual toilets	3. Lower electricity charges	3. Functional streetlight	3. Functional streetlights	3. Toilet	3. Electricity	3.Government school nearby (both kindergarten and formal school)	3. Garbage	3. Bus service nearby the settlement	3. PHC near the settlement		3. Government hospital in vicinity of the settlement
	4. Cleanliness in settlement	4. Better transport services	4.Solid waste management	4.Individual toilets as well as community toilets	4. Solid waste disposal	4. Solid waste disposal	4.Committee hall	4. Regular cleaning of Sewage network	4. PHC in vicinity of the settlement	4. Well-maintained community toilets		4. Streetlight in the settlement
	5. Employment opportunities for men	5. Individual household water supply	-	-	-	5. Sewage Network	-	5. Storm water drainage	5. Government school for boys in vicinity of the settlement	5. *Pucca* and covered sewage network		5. PDS outlet in the vicinity of the settlement

Contd.

Settlement No.	7		8		9		10		11		12	
Name of Settlement	**Gautam Nagar**		**P.C.Nagar**		**Gareeb Nagar (Near Chola Railway Crossing**		**Gondh Basti (Near New Central Jail)**		**Hinotiya Alam - 610 Jhuggi**		**Baba Nagar 2**	
	M	F	M	F	M	F	M	F	M	F	M	F
Total population in settlement			601		202		1,353				2,654	
Prioritization of services	NA - FGD in this settlement was not feasible - Most of the inputs regarding the settlement were provided by the *anganwadi* teacher.		Conducting FGD with men was not feasible here	1.Piped water supply to every HH	1. Government school	1.Door-to door waste collection		1.Individual water connections	1.Functional Streetlights	1. Piped water supply to individual household	1. Individual water supply to each HH	1.Individual water supply to each HH
				2.Less electricity bill	2. Community toilets	2.Functional streetlights in the settlement		2.Community toilets	2.Individual piped water supply	2. *Pucca* roads in the settlement	2. Provision of waste disposal facility - cleanliness of settlement	2.Functional streetlights
				3.In-situ up-gradation of hutments -	3. Streetlights in poles	3.School in the vicinity of the settlement		3.Cleaning of drains	3. *Pucca* road with drainage network	3. Regular cleaning of choked drains/ septic tanks	3. Livelihood opportunities	3. Individual toilet in each HH
				4. Individual toilets	4. Employment opportunities	4.Community toilet in the settlement		4.Government hospital in vicinity	4. Regular cleaning of sewage lines	4. Transportation connectivity nearer to the settlement	4. Security of tenure	4. *Pucca* roads
				5. School upto 12th class		5.Employment opportunities		5.Government school	5.Door-to-door waste picking			5.*Pucca* covered drainage network

Annexure 4: Gender Passenger Counts at Road Intersections, Bhopal.

Gender passenger counts as per survey

Road Intersection	Timing	Total of Males	Total of Females
Lalghati (Collector Office - Hamidiya, Airport, VIP Road, Bhairagarh	Morning	2,384	671
	Noon	2,285	604
	Evening	2,529	777
Total		**7,198**	**2,052**
Roshanpura (PHQ, Polythenic, Mata Mandir, Rangmahal)	Morning	2,288	649
	Noon	2,582	603
	Evening	2,625	742
Total		**7,495**	**1,994**
Board Office (Chetak brigde, DB Mall, Habibganj, Link Road)	Morning	3,042	767
	Noon	2,900	780
	Evening	3,318	917
Total		**9,260**	**2,464**

Considering morning and evening peak of three hours and non-peak of remaining 12 hours, per day total number of male and female passengers have been computed. For example, at Lalghati cross junction, morning male counts X 4 X 3hrs.

Timing/ Road Junction	Lalghati		Roshanpura		Board Office	
	M	F	M	F	M	F
Morning	28,608	8,052	27,456	7,788	36,504	9,204
Noon	109,680	28,992	123,936	28,944	37,440	9,360
Evening	30,348	9,324	31,500	8,904	39,816	11,004
Total	**168,636**	**46,368**	**182,892**	**45,636**	**113,760**	**29,568**
% of female passengers	**21.57**		**19.97**		**20.63**	
Average	**20.72**					

Annexure 5: Gender Passenger Counts at BRTS Junctions, Bhopal.

Gender passenger counts as per survey

BRTS Stand	Freq. of Buses	Timing	Males (M)		Total of M	Females (F)		Total of F
			Boarding	Alighting		Boarding	Alighting	
Lalghati (30 min)	28	Morning	72	35	107	27	10	37
	19	Noon	44	21	65	20	6	26
	25	Evening	28	45	73	12	23	35
Total	**72**		**144**	**101**	**245**	**59**	**39**	**98**
Hamidiya (30 min)	25	Morning	60	69	129	13	31	44
	16	Noon	32	28	60	16	7	23
	20	Evening	55	18	73	28	10	38
Total	**61**		**147**	**115**	**262**	**57**	**48**	**105**
Jyoti Talkies (15 min)	14	Morning	12	25	37	8	21	29
	23	Noon	40	44	84	26	27	53
	28	Evening	80	40	120	75	40	115
Total	**65**		**132**	**109**	**241**	**109**	**88**	**197**
New Market (15 min)	18	Morning	17	30	47	9	11	20
	14	Noon	7	38	45	7	27	34
	20	Evening	33	22	55	32	15	47
Total	**52**		**57**	**90**	**147**	**48**	**53**	**101**
Royal Market (30 min)	19	Morning	25	37	62	16	13	29
	21	Noon	29	19	48	19	5	24
	22	Evening	32	20	52	12	9	21
Total	**62**		**86**	**76**	**162**	**47**	**27**	**74**

Considering morning and evening peak of three hours and non-peak of remaining 12 hours, per day total number of male and female passengers have been computed. For example, at Lalghati, morning male counts X 2 X 3hrs or at Jyoti Talkies, afternoon male counts X 4 X 12.

Timing/ BRTS Stand	Lalghati		Hamidiya		Jyoti Talkies		New Market		Royal Market	
	M	F	M	F	M	F	M	F	M	F
Morning	642	222	774	264	444	348	564	240	372	174
Noon	1,560	624	1,440	552	4,032	2,544	2,160	1,632	1,152	576
Evening	438	210	438	228	1,440	1,380	660	564	312	126
Total	**2,640**	**1,056**	**2,652**	**1,044**	**5,916**	**4,272**	**3,384**	**2,436**	**1,836**	**876**
% of female passengers	**28.57**		**28.25**		**41.93**		**41.86**		**32.30**	
Average	**34.58**									

Annexure 6: Calculation of Congestion factor PMC, 2011

Congestion factor is calculated based on assumption that each married couple will require an exclusive room to themselves. The numbers in the table below are from Census 2011 for PMC. The numbers in the bracket are the couples requiring separate room.

Congestion in Households (PMC - 2011)							
Number of married couples	Number of Households having:						Total married couples requiring separate room
	No exclusive room	one	two	three	four	five	
1	(1) x 23,116						11,236
2	(2)x 2,278	(1)x19,698					21,976
3	(3)x 296	(2)x2,705	(1)x4,113				9,819
4	(4)x40	(3)x289	(2)x409	(1)x514			2,239
5+	(5)x 20	(4)x47	(3)x58	(2)x 63	(1)x57	(1) x42	607
Total married couples requiring separate room							**45,877**

Annexure 7: Details of FGDs conducted in 16 Settlements, Pune.

Settlement No.	1		2		3		4	5		6		7		8	
Name of Settlement	Dias Plot		Gosavi Vasti		Chaitraban 1		Sanjay Gandhi Vasahat	Lohiya Nagar		Nadegalli		Premnagar		Panmala	
	M	F	M	F	M	F	F	M	F	M	F	M	F	M	F
Total population in settlement	7,255		4,225		12,936		2,990	16,556		785		3,665		4,790	
WATER															
Availability of piped water supply ('Y' for Yes/ 'N' for No)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
If Yes - Household level/ Common community tap	Household level (Two lines provided, SS consistent only in new line)	Household level (each hh has two pipes)	Household level	80% of coverage at Household level/ community level tap one tap per 4/5 hh	-	Household level (Two HH have one connection/ some HH have individual SS/ no community taps)	Household level	Household level	Household level	Household level	Household level	Household level	Household level	Household level	Household level
Duration of supply (in hrs/ mins)	24hrs of supply (current SS in morning)	24hrs ss (currently SS on alternate days- 5.30 pm-9pm)	-	3-4am-9am/11am-1pm/3pm-7pm (daily supply. Current supply on alternative days, not supplied to all hh since some hh pull water using motors)	2hrs daily (Current SS on alternative days)	Every day one hour (Current SS on alternate days)	All day up to 11 at night (Current SS on alternate days).	Currently on alternate days	Afternoon to evening: 3pm to 7 pm daily (Currently alternate days)	Daily	Daily 24 hrs	Daily 24hrs (Currently SS on alternate days)	Daily 24hrs (Currently SS not effected)	Daily 5pm - 9am (Currently SS on alternative days)	Daily 5pm - 9am (Currently SS on alternative days)
Pressure (Low/ Medium/ High)	-	Medium to Low - (interior hh in settlement have no ss)	Low	Low	-	-	-	Low pressure	Medium to low	-	-	-	-	Low pressure (HH on higher slope have no SS)	Low pressure (HH on higher slope have no SS)
Quality of water - Potable ('Y' for Yes/ 'N' for No)	Y (initially water SS not clean, muddy)	Y	Y	Y (some parts affected because of leaks in sewerage pipes mixing with drinking water)	Y (ok, dirty water from old line)	N (Water SS not clean water for some HH)	Y	Y	Y	Y	Y	Y (Initial SS of half an hour smells, then clean)	Y (Smells often)	Y	Y
Satisfaction level with respect to quality and quantity of the water supply (1-5, with 5 most satisfied)	3	5	2	some areas 3-4/ some areas 1	4	2	5	0 (Sporadic SS, water on alternative days, only in some households)	4	5	5	4	4 (first one hour is dirty water)	3 (Not enough SS)	3 (Not enough SS)
SANITATION															
Per cent of HH with toilets	None	None	Few (ten households)	Few (8-10 Households)	Few (200 to 250 households)		Few (200-300 households)		Y (Few)	Y	Few (4-5 households)	Y (10% homes have toilets)	Y (40-50 homes)	N	N
Presence of community toilets ('Y' for Yes/ 'N' for No)	Y (One pay and use toilet)	Y	Y (Five in community)	Y (six in community, two closed)	Y (three toilets -12 seats for men/12 for women)	Y (3 in community - each with12 seats for women)	Y (one community toilet- six seats each)	Y	Y (One - men/women 10/10 seats)	Y (One community toilet)	Y (out of 20 for women only 3-4 in working condition)	Y (4 community toilets)	Y (4 Community toilets - 10 seats each)	Y (Two community toilets - 11 for men/9 men)	Y (Two community toilets - 11 for men/9 men)
Maintenance of community toilets ('Y' for	-	-	Y (Low maintenance)	N (Had to collect some money to	Y	Y	Y	N	N	Y (Low)	N	Y (cleaner form Mcorp)	N	Y	Y

Yes/ 'N' for No)				hire cleaners)											
Safety of community toilets ('Y' for Yes/ 'N' for No)	-	-	-	Y	-	N	N	-	-	-	Y	-	Y	Y	Y
Open Defecation ('Y' for Yes/ 'N' for No)	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Presence of Sewerage line ('Y' for Yes/ 'N' for No)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
If Yes - Closed/ Semi-covered/ Open network	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
Frequency of blockage of sewerage lines	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Satisfaction level with respect to its working (1-5 with 5 most satisfied)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SOLID WASTE MANAGEMENT															
Presence of solid waste disposal facility ('Y' for Yes/ 'N' for No)	N	-	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
If yes, whether door-to-door or community bin	-	-	Community bins	2 community bins	Community bins	Dump in nearby society	Door-to-door collection	Door-to-door collection by *ghanta gaadi*,	Door-to-door collection	Community bin	*ghanta gaadi*	*ghanta gaadi*	2 Community bins	2 Community bin far away	2 Community bin far away
Frequency of picking it up	-	-	Once in 15 days	Once in 8 days (but waste thrown in different spots in settlement/ *nallah*)	Collected by road sweepers		On all days except Sunday	Daily (infrequent)	Daily except Sunday	Daily except Sunday	Daily (Not regular)	Daily except Sunday	Daily picked up	-	-
Satisfaction level with respect to picking up of solid waste from settlement (with 5 most satisfied)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRANSPORT & OTHER FACILITIES															
Roads within settlement (Fully/ Partly/ Uncovered)	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Paved cemented	Full	Full	Full	Full
Paved ('Y' for Yes/ 'N' for No)	Y	Y	Y	Y (In poor condition)	Y (in poor condition since rains)	Y	Y	Y	Y	Y		Y	Y	Y	Y
Presence of street lights ('Y' for Yes/ 'N' for No)	Y	Y	Y	Y	Y (not all functioning)	Y (sporadic functioning)	Y	Y (dysfunctional for past 6-8 months)	Y	Y	Y	Y	Y	Y	Y
Use of City bus service/ BRTS/ Private transport	-	-	Y	Y	Y	Y/ Walk to work	N (mostly walk to work)	Y	Y / Walk to work	Y	Y	Y	Y	Y	Y
Location of nearest bus stand	Near	Near	Near (go upto highway)	Near	Near	Near	Near	Near	Near	near	Near	Near	Near	Near	Near
Proximity of health care facility, school	PHC within settlement (but need better services); No playground	Community hall; playground; *anganwadi* within settlement; no PHC	-	3 *Anganwadis* and private doctor within settlement; School; hospital nearby	Private and govt. hospitals accessible; community hall, open ground for children; 3	*Anganwadi* present, corporation school near and health care center very far	2 *Anganwadis* present; school close by; health center private closely, govt. far away in Pashan; community hall and playground	Healthcare center within settlement; Ration shop far away	*Anganwadi*; health care centre nearby Community hall present; no ration shop	One *aanganwadi*, school (private, govt., *urdu*) within settlement	Govt and private hospital nearby, *anganwadi* within settlement, no play	PHC,private hospital govt. school, 3 *anganwadis*, small park area for children,	4 *anganwadis;* kids play in *chowk*; private healthcare center; community	2 *anganwadi*, govt. hospital, schools - private within settlement; playground not available, no community	2 anganwadi, govt hospial, schools - private within settlement; playground not available, no community

					anganwadis present.		not present				ground	community hall present	hall present	hall	hall

Contd.

Settlement No.	9		10	11		12		13		14	15		16	
Name of Settlement	Indira Aoudhik		Patil Estate	Saibaba Vadarvasti		Khilarevasti		Wadarvadi		Weikfield	Bhim Nagar		Yamunanagar	
	M	F	F	M	F	M	F	M	F	F	M	F	M	F
Total population in settlement	-		6,093	7,500		1,825		6,093		1,750	1,080		2,160	
WATER														
Availability of piped water supply ('Y' for Yes/ 'N' for No)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
If Yes - Household level/ Common community tap	Household level	Household level	Household level	Household level	Household level/ 2 common taps	Household level	Household level	Household level	Household level	Household level	Household level	Household level	Household level	Household level
Duration of supply (in hrs/ mins)	Daily 24hrs (Currently water SS on alternate days 6am-11am)	5-10 am and 5-8 pm, (Currently SS on alternative days)	Daily,24 hrs	Daily, 24hrs (Current SS 9-11 am on alternative days)	Previously all time, currently alternate days	-	Currently SS on alternative days (5am - 9am)	Currently SS on alternative days (5-9am)	Alternate days currently - on (2am -10am)	Daily, 24hs (Currently SS on alternate days)	Currently, SS alternate days in afternoon	2pm/3pm-6pm on alternate days currently	Currently on alternative days	Currently on alternative days (HH use motors to pull water, SS is not uniform)
Pressure (Low/ Medium/ High)	High to low	-	-	-	-	-	-	-	-	-	-	-	-	-
Quality of water - Potable ('Y' for Yes/ 'N' for No)	Y (First ten minutes of SS is not clean, muddy)	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	-	N (Water SS as part of WHO scheme, quality not satisfactory, not clean, smells, mixed with sewage)
Satisfaction level with respect to quality and quantity of water supply (1-5, with 5 most satisfied)	3	5	4	-	5	-	-	5	-	5	5	5	3 (Water quantity is low, due to leaking pipes)	2
SANITATION														
Per cent of HH with toilets		Few (50 HH approx..)	N	Y (20% Households)	Y (20 households)	Y(Few HH)	Y (one line - 20-25 HH)	Y (10-12 households)	N	Y (Few)	Y (100 HH	Y (40% households)	Y (40-50 households)	Y (Few)
Presence of community toilets ('Y' for Yes/ 'N' for No)	Y (6 community toilets)	Y (6 community toilets)	Y (4 ladies)	Y (12 seats for men, only 6 are operational)	Y (4 Common toilets - women/Men - 5/5)	Y (28 seats men/13-14 seats for women)	Y (1 community toilet - 12 seats each for men & women)	Y	Y	Y (6 seats for men/ 6 for women)	Y	Y (10 women /10 men)	Y	Y
Maintenance of community toilets ('Y' for Yes/ 'N' for No)	Y	Y	Y (Low)	Serviced by contractor paid by community who lives upstairs (75 rs pm/phh/pd)- maintenance- not enough taps provided	Corporation appointed cleaner doesn't come often	-	Corporation employed cleaner- not well maintained	Y	Y	Y	Y	Y	-	Y
Safety of community toilets ('Y' for Yes/ 'N' for	-	Y	Y	-	N	Y	Y	-	-	Y	-	Y	-	-

No)														
Open Defecation ('Y' for Yes/ 'N' for No)	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Presence of Sewerage line ('Y' for Yes/ 'N' for No)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
If Yes - Closed/ Semi-covered/ Open network	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
Frequency of blockage of sewerage lines	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Satisfaction level with respect to its working (1-5 with 5 most satisfied)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SOLID WASTE MANAGEMENT														
Presence of solid waste disposal facility ('Y' for Yes/ 'N' for No)	Y	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
If yes, whether door-to-door or community bin	Community bins	Community bins	2 Community bins	Open dumping (as *ghanta gaadi* doesn't full settlement)	*Ghanta gaadi*	*Ghanta gaadi*	*Ghanta gaadi*	Community bins - 2 (separate wet and dry	Community bins	Open dumping (on road or in open ground)	*Ghanta gaadi*	*Ghanta gaadi*	two waste pickers appointed	-
Frequency of picking it up	once in three days	Daily	Daily		Daily (8am)	Daily (infrequent)	Daily	Daily	Daily		-	Daily	Daily (comes only once week)	Daily (Not adequate service sporadic)
Satisfaction level with respect to picking up of waste from settlement (with 5 most satisfied)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRANSPORT & OTHER FACILITIES														
Roads within settlement (Fully/ Partly/ Uncovered)	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full
Paved ('Y' for Yes/ 'N' for No)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Presence of street lights ('Y' for Ye / 'N' for No)	Y	Y	Y (Some parts of settlement not covered)	Y	Y	Y	Y	Y	Y	Y	Y	Y (Some do not work)	Y	Y
Use of City bus service/ BRTS/ Private transport	Y	Y	Y	Y	Y	Y	Y	Y/ Cycling	Y	Y	Y	Y	Y	Y
Location of nearest bus stand	Near	Near	Near	Near	Near	Near	Near	Near	Near	Near	Near	Near	Near	Near
Proximity of health care facility, school	No playground	*Anganwadi*, PHC, park for children but no ground; Community hall present	4 *Anganwadis*, private health care as govt. hospital far (Sasoon), govt. school present in settlement; no community hall; no playground.	PHC present	*Anganwadi,* municipal school, many private, govt. and private health centre in settlement; no playground; no community hall.	School present in community, no playground;	*Anganwadi,* govt. school, community hall present, no playground	Private hospitals, PHC, 4 *anganwadis.* Govt. school present in settlement	PHC, *anganwadi* present in settlement; no community hall, ration shop not adequately providing	Private heath centre, *anganwadi,* school private, community hall present; playground not present.	PHC, community hall, *anganwadi* present, no playground	PHC, *anganwadi,* private school, ration shop close to settlement	PHC, *anganwadi* and private school in settlement	PHC and private school in settlement

Annexure 8: Prioritization of services in 16 Settlements, Pune.

Settlement No.	1		2		3		4	5		6		7		8	
Name of Settlement	Dias Plot		Gosavi Vasti		Chaitraban 1		Sanjay Gandhi Vasahat	Lohiya Nagar		Nadegalli		Premnagar		Panmala	
	M	F	M	F	M	F	F	M	F	M	F	M	F	M	F
Total population in settlement	7,255		4,225		12,936		2,990	16,556		785		3,665		4,790	
Prioritization of services	1.Employment	1.Employment	1.Employment	1.Toilets	1. Big play ground for children	1. Home-based work	1.Home-based work	1. Water	1. Higher water pressure	1. Employment	1.Toilets in hh/ clean community toilets	1.Door-to-door waste collection	1. Clean toilets	1.Open place to sit and talk	1. Home based work
	2.Services for senior citizens living in slums	2.Safety of children - closed net over *nallah*	2.Clean safe water	2.SWM (*ghanta gaadi*)	2. Parking for vehicles	2. SWM (*ghanta gaadi*)	2.Close local *adda* where men play cards and drink	2. Toilets, cleanliness awareness	2.Maintenance of community toilets	2. Education	2. SWM collection	2. Well maintained toilets	2. Home based work	2. Housing (400sq.ft.DU, less than five stories)	2. Playground
	3.Improved PHC	3.Safety for women and children in slums	3. Toilets	3.Play area for children	3. Space for elderly & women	3. Clean Toilet	3. Want kerosene to be provided in ration shop	3. Food for poorest	3. Better house	3. Housing	3. Playground for children	3. Self-constructed DUs with govt. contribution, not SRS	3.Maintained drainage	3. Playground for children	3. Space for yoga for women
	-	4.PDS delivery without corruption	4. Proper drainage line/ gutter line	4.Drainage line - more capacity	4. Proper PHC	4. Water on time	4. Playground for children	4. Quality education	4. Ration shop nearby	4.Cleanliness within settlement	-	-	-	4. Library and gym	-
	-	5. Creche	5.SWM	5.Proper entry road		5.Well maintained drains	-	-	-	-	-	-	-	-	-

Contd.

Settlement No.	9		10	11		12		13		14	15		16	
Name of Settlement	Indira Aoudhik		Patil Estate	Saibaba Vadarvasti		Khilarevasti		Wadarvadi		Weikfield	Bhim Nagar		Yamunanagar	
	M	F	F	M	F	M	F	M	F	F	M	F	M	F
Total population in settlement	-		6,093	7,500		1,825		6,093		1,750	1,080		2,160	
Prioritization of services	1.Employment	1. Clean toilet	1. PHC	1. Drainage of more capacity	1. SWM	1. Clean toilets	1. Home-based work	1. Employment	1. Clean toilets	1. Zebra crossing	1. Employment	1. Ration Shop	1. Rehabilitation	1. Improved water quality
	2. Playground	2. Door-to-door waste collection	2. SWM services	2. SWM	2. Playground for children	2. Playground for children	2. Toilets in every HH	-	2. Playground for children	2. Toilets	2. Place to meet and sit	2. Toilet, especially for children	2. Employment	2. Clean drains
	3. Drainage line of capacity	3. Regular maintenance of drains.	3. Reduce crime and addiction	3. Water supply	3. Fumigation - mosquitoes	3. New road to reduce traffic around slum	3. Playground for children	-	3. Uniform water supply	3. SWM management	3. Playground	3.Control over stray animals	-	3. Bathroom in hh
	4. Paving of dug road	4. Home based work	4. Clean Toilets	-	-	4. *Nallah* behind slum to be cleaned	-	-	-	4. Water	4. Roads of better quality	4. Clean drains	-	-
	-	5. Playground for children	5. Skill development for youth	-	-	-	-	-	-	5. Govt. hospital	5. Higher education	5. Playground for children	-	-

Annexure 9: Gender Passenger Counts at Road Intersections, Pune.

Gender passenger counts as per survey

Road Intersection	Timing	Total of Males	Total of Females
Khanduji Baba Chowk	Morning	2,912	950
	Noon	2,195	393
	Evening	2,819	558
Total		**7,926**	**1,901**
Nal Stop	Morning	2,995	611
	Noon	2,626	569
	Evening	3,080	773
Total		**8,701**	**1,953**
RTO	Morning	2,111	487
	Noon	1,481	265
	Evening	1,949	556
Total		**5,541**	**1,308**
Shimla Office	Morning	2,593	475
	Noon	2,642	458
	Evening	1,428	309
Total		**6,663**	**1,242**

Considering morning and evening peak of three hours and non-peak of remaining 12 hours, per day total number of male and female passengers have been computed. For example, at Shimla Office cross junction, morning male counts X 4 X 3hrs.

Timing/ Road Junction	Khanduji Baba Chowk		Nal Stop		RTO		Shimla Office	
	M	F	M	F	M	F	M	F
Morning	34,944	11,400	35,940	7,332	25,332	5,844	31,116	5,700
Noon	105,360	18,864	126,048	27,312	71,088	12,720	126,816	21,984
Evening	33,828	6,696	36,960	9,276	23,388	6,672	17,136	3,708
Total	**174,132**	**36,960**	**198,948**	**43,920**	**119,808**	**25,236**	**175,068**	**31,392**
% of female passengers	**17.51**		**18.08**		**17.4**		**15.2**	
Average	**17.65**							

Annexure 10: Gender Passenger Counts at Bus Stands, Pune.

Gender passenger counts as per survey

Bus Stand	Freq. of Buses	Timing	Males		Total of Males	Females		Total of Females
			Boarding	Alighting		Boarding	Alighting	
Sasoon Hospital	37	Morning	194	40	234	56	34	90
	20	Noon	120	48	168	88	23	111
	31	Evening	180	65	245	87	41	128
Total	**88**		**494**	**153**	**647**	**231**	**98**	**329**
Shimla Office	26	Morning	165	48	213	54	37	91
	27	Noon	121	52	173	23	24	47
	22	Evening	146	66	212	66	40	106
Total	**75**		**432**	**166**	**598**	**143**	**101**	**244**
Deccan corner/ Khanduji Baba	43	Morning	95	128	223	44	99	143
	28	Noon	59	48	107	24	13	37
	38	Evening	113	90	203	71	62	133
Total	**109**		**267**	**266**	**533**	**139**	**174**	**313**
SNDT	24	Morning	55	29	84	49	109	158
	27	Noon	37	28	65	29	24	53
	29	Evening	58	59	117	47	38	85
Total	**80**		**150**	**116**	**266**	**125**	**171**	**296**

Considering morning and evening peak of three hours and non-peak of remaining 12 hours, per day total number of male and female passengers have been computed. For example, at Sasoon Hospital, morning male counts X 4 X 3hrs.

Timing/ Bus Stand	Sasoon Hospital		Shimla Office		Deccan Corner/ Khanduji Baba		SNDT	
	M	F	M	F	M	F	M	F
Morning	2,808	1,080	2,556	1,092	2,676	1,716	1,008	1,896
Noon	8,064	5,328	8,304	2,256	5,136	1,776	3,120	2,544
Evening	2,940	1,536	2,544	1,272	2,436	1,596	1,404	1,020
Total	**13,812**	**7,944**	**13,404**	**4,620**	**10,248**	**5,088**	**5,532**	**5,460**
% of female passengers	**36.51**		**25.63**		**33.18**		**49.67**	
Average	**36.25**							

References and Further Reading

AFD, (2014). *Panaroma of the Urban and Municipal sector in India,* Agence Francaise de Development, Paris, http://www.afd.fr/webdav/site/afd/shared/PUBLICATIONS/RECHERCHE/Scientifiques/Focales/20-VA-Focales.pdf, Accessed on September 12, 2015.

Agarwal, B. (1994). *A Field of One's Own: Gender and Land Rights in South Asia,* New York: Cambridge University Press.

Anand, A. and G. Tiwari (2006). "A Gendered Perspective of the Shelter-Transport-Livelihood Link: The Case of Poor Women in Delhi," *Transport Reviews* 26(1), pp. 63-80.

Baruah, B. (2010). *Women and Property in Urban India*, Vancouver: UBC Press.

Basu, S. (1999). *She Comes to Take Her Rights: Indian Women, Property and Prosperity*, New Delhi: Kali for Women.

Beall, J. (1995). *Women in the City: Housing, Services, and the Urban Environment*, Organisation for Economic Co-operation and Development (OECD).

Beall, J. (1996). "Participation in the City: Where do women fit in?," *Gender and Development* 4(1), pp. 9-16.

Beyazit, E. (2011). "Evaluating Social Justice in Transport: Lessons to be Learned from the Capability Approach," *Transport Reviews: A Transnational Transdisciplinary Journal* 31(1), pp. 117-134.

BMC (2014). *Budget Estimate: 2014-15*, Bhopal Municipal Corporation, Madhya Pradesh.

BMC (2015). *Budget Estimate: 2015-16*, Bhopal Municipal Corporation, Madhya Pradesh.

Boserup, E. (1970). *Women's Role in Economic Development*, London: Earthscan.

Budlender, D., D. Elson, G. Hewitt and T. Mukhopadhyay (2002). *Gender Budgets Make Cents: Understanding gender responsive budgets*, Commonwealth Secretariat, London.

Census (2011). *Madhya Pradesh District Census Handbook – Town Amenities*, Directorate of Census Operation, Ministry of Home Affairs, Madhya Pradesh, http://www.censusindia.gov.in/2011census/dchb/DCHB.html, Accessed on August 5, 2015.

Chakraborty, L. S. (2005). *Gender Budgeting in Selected Ministries: Conceptual and Methodological Issues*, Working Paper, NIPFP-DWCD, Ministry of Human Resource Development, Government of India, New Delhi.

Chakraborty, L. S. (2007). "Gender Responsive Budgeting and Fiscal Decentralisation in India: A Preliminary Appraisal," Working Paper 46, National Institute of Public Finance and Policy, New Delhi, http://www.nipfp.org.in/newweb/sites/default/files/wp_2007_46.pdf, Accessed on September 12, 2015.

Chattopadhyaya, R. and E. Duflo (2004). "Women as Policy Makers: Evidence from a Randomized Policy Experiment in India," *Econometrica* 72(5), pp. 1409-1443.

Chen, M. (1998). *Widows in India: Social Neglect and Public Action*, New Delhi: Sage.

de Waal, M. (2006). "Evaluating Gender Mainstreaming in Development Projects," *Development in Practice* 16(2), pp. 209-214.

DNA (2013). "PMPML faces a rough ride as complaints by women rise," *DNA*, October 16, 2013, http://www.dnaindia.com/pune/report-pmpml-faces-a-rough-ride-as-complaints-by-women-rise-1904064, Accessed on November 2, 2015.

Duchène, C. (2011). "Gender and Transport," International Transport Forum Discussion Paper No. 2011-11, Organisation for Economic Co-operation and Development, Paris, http://www.oecd-ilibrary.org/transport/gender-and-transport_5kg9mq47w59w-en, Accessed on September 1, 2015.

Economic Times (2015). "Pune Metro to have both underground, elevated corridors: Devendra Fadnavis," *Economic Times*, June 12, 2015, http://economictimes.indiatimes.com/industry/transportation/railways/pune-metro-to-have-both-underground-elevated-corridorsdevendra fadnavis/articleshow/47640388.cms, Accessed on August 13, 2015.

Elson, D. (2001). "Gender Responsive Budget Initiatives: Some Key Dimensions and Practical Examples," Paper presented at conference on Gender Responsive Budgeting, UNIFEM-OECD-Nordic Council, Brussels, Belgium, October 16-17.

EMBARQ (2014). "Motorized Two-Wheelers in Indian Cities: A Case Study of the City of Pune," Working Paper, EMBARQ, India, http://www.wrirosscities.org/sites/default/files/Motorized-Two-Wheelers-Indian-Cities-Pune-EMBARQ-India.pdf, Accessed on August 30, 2015.

EMBARQ (2015). *Women's Safety in Public Transport: A Pilot Initiative in Bhopal*, EMBARQ, India, http://wricitieshub.org/sites/default/files/Final_Report_24082015_0.pdf, Accessed August 28, 2015.

Engles, F. (1985). *The Origin of Family Private Property and State*, New York: Viking.

Evans, M. and C.H. Williams (eds) (2015). *Gender: The Key Concepts*. New York: Routledge.

GoMP (2005). *Bhopal Development Plan 2005*, Directorate of Town and Country Planning, Madhya Pradesh.

GoMP (2008). Madhya Pradesh Housing and Habitat Policy, Housing and Environment Department, Madhya Pradesh, http://www.mphed.nic.in/Housing%20Policy%20Oct-2007-Final.pdf, Accessed on August 11, 2015

GoMP (2014a). *Order No. 528 – Area of villages to be included within limits of Bhopal dated 20th November, 2015*, Urban Development and Environment Department, Madhya Pradesh, http://indianemployees.com/uploads/documents/112014/1416907591-2014-11-20-528.pdf, Accessed on August 11, 2015.

GoMP (2014b). *Order No. 532 – Number of Wards determined in the Municipal Corporation, Bhopal*, Commissioner Office, Madhya Pradesh, http://indianemployees.com/uploads/documents/112014/1416908701-2014-11-21-532.pdf, Accessed on August 11, 2015.

Hanson, S. (2010). "Gender and Mobility: New Approaches for Informing Sustainability," *Gender, Place & Culture: A Journal of Feminist Geography* 17(1), pp. 5-23.

Harvey, D. (1973). *Social Justice and the City*, London: Edward Arnol.

Himanshu Parikh (2001). Consulting Engineers & Youth for Unity and Voluntary Action (YUVA). Project Framework Report: Slum Networking of Bhopal for Government of Madhya Pradesh.

Janwani (2014). *Pune Municipal Corporation Budget - Identifying gaps and probable entry points for improving the living conditions of children in slums of Pune*, Janwani, Pune, http://janwani.org/site/wp-content/uploads/2014/12/Approach-Paper-Final-copy.pdf, Accessed on September 3, 2015.

Janwani (2015). *PMC Budget simplification and analysis 2015-16*, Janwani, Pune, http://janwani.org/site/pmc-budget-simplification-and-analysis-2015-16/, Accessed on August 18, 2015.

Joshi, R. (2002). "Integrated Slum Development: Case of Pravinnagar-Guptanagar," in A. Kundu and D. Mahadevia (eds) *Poverty and Vulnerabilities in a Globalizing Metropolis: Ahmedabad*, Delhi: Manak Publishers, pp. 268-308.

Judd, K. (eds) (2002). *Gender Budget Initiatives: Strategies, Concepts and Experiences*, New York: UNIFEM.

Kabeer, N. (1994). *Reversed Realities: Gender Hierarchies in Development Thought*, London: Verso.

Kerkin, K. and M. Huxley (1993). "Training women planners or educating feminist Urbanists," *Urban Futures Journal* (special issue on Women and Planning) 3, pp. 33-38.

Khosla, P. (2003). *Water, Equity and Money: The Need for Gender-Responsive Budgeting in Water and Sanitation*. Netherlands: The Netherlands Council of Women.

Khosla, R. (2009). *Addressing Gender Concerns in India's Urban Renewal Mission*, New Delhi: United Nations Development Programme.

Kundu, D. and D. Samanta (2011). "Redefining the Inclusive Urban Agenda in India," *Economic and Political Weekly* 46(5), pp. 55-63.

Lahiri, A., L.S. Chakraborty and P.N. Bhattacharryya, (2003). *Gender Budgeting in India*, New Delhi: National Institute of Public Finance and Policy.

Lips, Hilary M. (2015). *Gender: The Basics*, London: Routledge.

Mahadevia, D. (2006). "NURM and the Poor in Globalising Mega Cities," *Economic and Political Weekly* 41(31), pp. 3399-3403.

Mahadevia, D. (2009). "Urban Land Market and Access of the Poor," in India, Ministry of Housing and Urban Poverty Alleviation (ed) *India: Urban Poverty Report 2009*, New Delhi: Oxford University Press, pp.199-221.

Mahadevia, D. (2010). "Urban Reforms in Three Cities: Bangalore, Ahmedabad, and Patna," in Vikram Chand (ed) *Public Service Delivery In India: Understanding The Reform Process*, New Delhi: Oxford University Press, pp. 226-295.

Mahadevia, D. (2011a). "Branded and Renewed? Policies, Politics and Processes of Urban Development in the Reform Era," *Economic and Political Weekly* 46(31), pp. 56-64.

Mahadevia, D. (2011b). "Tenure Security and Urban Social Protection in India," CSP Research Report 05, Centre for Social Protection, Institute of Development Studies, Sussex, http://www.ids.ac.uk/files/dmfile/ResearchReport05FINAL.pdf, Accessed on September 1, 2015.

Mahadevia, D. (2013). "Urban Poverty in India and Post-MDG Framework," Oxfam India Working Paper Series, OIWPS–17, Oxfam India, New Delhi, http://www.oxfamindia.org/sites/default/files/Working%20paper%2017.pdf, Accessed on September 1, 2015.

Mahadevia, D. (2015a). "Women's Entitlement to Housing Security in Urban India," in O.P. Mathur (ed) *State of Urban Poor Report 2015 – Gender and Urban Poverty*, New Delhi: Oxford University Press, pp. 90-108.

Mahadevia, D. (2015b). *Gender Sensitive Transport Planning for Cities in India*, UNEP DTU Partnership, Centre on Energy, Climate and Sustainable Development, Roskilde: Technical University of Denmark.

Mahadevia D. and H. Brar (2008). "Basic Infrastructure, Public Finance and Slum Dwellers: Ahmedabad," in D. Mahadevia (ed) *Inside the Transforming Urban Asia: Processes, Policies and Public Actions*, New Delhi: Concept Publishing Company, pp. 361-390.

Mahadevia, D., R. Joshi and R. Sharma (2009). "Integrating the Urban Poor in Planning and Governance Systems, India," Working Paper 3, Centre for Urban Equity, CEPT University, Ahmedabad, http://cept.ac.in/UserFiles/File/CUE/Working%20Papers/Revised%20New/02CUEWP2_Approaches%20to%20the%20Lands%20for%20the%20Urban%20Poor%2C%20India.pdf, Accessed on October 20, 2015.

Mahadevia, D., R. Joshi and A. Datey (2012). *Accessibility and Sustainability of Bus Rapid Transit in India*, UNEP Risoe Centre on Energy, Climate and Sustainable Development, Roskilde: Technical University of Denmark.

Mahadevia, D., A. Datey and A. Mishra (2013). "Foisting Mass Housing on the Poor: Lessons from the Social Audit of BSUP," Working Paper 21, Centre for Urban Equity, CEPT University, Ahmedabad, http://cept.ac.in/UserFiles/File/CUE/Working%20Papers/Revised%20New/21CUEWP%2021_Foisting%20mass%20housing%20on%20the%20poor.pdf, Accessed on October 20, 2015.

Mahadevia, D. and A. Datey (2015). "From land tenure regularization to mass housing in Bhopal: An assessment," in D. Mahadevia (ed), *Shelter Security in Urban India – Pathways, Barriers and Outcomes*. New Delhi: Concept Publishing Company Pvt. Ltd., pp. 282-324

Mashal (2010). *Housing study for Pune Municipal Corporation 2009 – 2010*, Mashal, Pune, http://www.punecorporation.org/informpdf/City%20Engineer%20office/Housing%20Report%20Final.pdf, Accessed on August 27, 2015.

Mashal (2011). *Pune City Slum Atlas*, Mashal, Pune.

MHUPA (2012). *Report of the Technical Group on Urban Housing Shortage (2012-2017)*, Ministry of Housing and Urban Poverty Alleviation, New Delhi, http://nbo.nic.in/Images/PDF/urban-housing-shortage.pdf, Accessed on November 16, 2015.

MHUPA (2013). *Slum Free City Plan for Bhopal Metropolitan Area – Volume 1*, Ministry of Housing and Urban Poverty Alleviation, New Delhi, http://164.100.158.30/writereaddata/Bhopal_MP_sfcp_Vol_I.pdf , Accessed on March 22, 2017.

MHUPA (2017a). *BSUP: State wise Report for latest Progress at Project & City Level* – as on 1st March, 2017, Ministry of Housing and Urban Poverty Alleviation, New Delhi, http://mhupa.gov.in/writereaddata/City_wise_BSUP.pdf , Accessed on March 22, 2017.

MHUPA (2017b). *RAY: State wise Report for latest Progress at Project & City/Town Level* – as on 1st March, 2017, Ministry of Housing and Urban Poverty Alleviation, New Delhi, http://mhupa.gov.in/writereaddata/Ray_State_Wise.pdf , Accessed on March 22, 2017.

Mies, M. (1998). *Patricarchy and Accumulation on a World Scale: Women in International Division of Labour*, London: Macmillan.

Modak, P. (2007). *Strategic Action Plan Report for Integrated Solid Waste Management Plan, Pune (Volume I)*, Pune: Environmental Management Centre, http://www.unep.or.jp/ietc/spc/activities/GPWM/data/T3/IS_2_2_VolumeI_StrategicActionPlan.pdf, Accessed on July 25, 2015.

Mohanty, P. K., B. M. Misra, R. Goyal and P.D. Jeromi (2007). *Municipal Finance in India: An Assessment*, Development Research Group Study No. 26, Reserve Bank of India, Mumbai, https://rbidocs.rbi.org.in/rdocs/content/pdfs/82500.pdf, Accessed on September 2, 2015.

Molyneaux, M. (1985). "Mobilization without Emancipation? Women's interests, state and revolution in Nicaragua," *Feminist Studies* 11(2), pp. 227-254.

MoRTH (2013). *Road Transport Year Book (2011-12)*, Ministry of Road Transport & Highways, New Delhi, http://morth.nic.in/showfile.asp?lid=1131, Accessed on August 11, 2015.

Moser, Caroline O. N. (1989). "Gender Planning in the Third World: Meeting practical and strategic gender needs," *World Development* 17(11), pp. 1799-1825.

Moser, Caroline O. N. (1993). *Gender Planning and Development: Theory, practice and training*, London: Routledge.

Moser, Caroline O. N. (2005). "Has Gender Mainstreaming Failed?," *International Feminist Journal of Politics* 7(4), pp. 576-590.

Moser, Caroline O. N. and L. Peake (1994). *Seeing the Invisible: Women, gender and urban development*, Washington, DC: The World Bank, Urban Development Division.

MoUD (nd). *Handbook of Service Level Benchmarking*, Ministry of Urban Development, New Delhi, www.wsp.org/UserFiles/file/service_benchmarking_india.pdf, Accessed on September 16, 2015.

MoUD (nd). *Service Level Benchmarks for Urban Transport at a Glance*, Ministry of Urban Development, New Delhi,

moud.gov.in/upload/uploadfiles/files/Service_level.pdf, Accessed on September 16, 2015.

MoUD (2007). *National Urban Transport Policy*, Ministry of Urban Development, New Delhi, http://www.moud.gov.in/upload/uploadfiles/files/TransportPolicy(2).pdf, Accessed on September 1, 2015.

MoUD (2012). *Service Levels in Urban Water and Sanitation Sector – Status Report (2010-11)*, Ministry of Urban Development, New Delhi, moud.gov.in/upload/uploadfiles/files/SLB%20National%20Data%20Book_0.pdf, Accessed on August 1, 2015.

MWCD (2007). *Gender Budgeting Handbook for Government of India Ministries & Department*, Ministry of Women and Child Development, New Delhi, http://wcd.nic.in/gb/material/Resource%20Material/GB%20Handbook%20and%20Manual/Hand%20Book.pdf, Accessed on September 10, 2015.

Parisar (2010). *Nowhere to Walk: Pune Walkability Survey*, Report 4, Parisar, Pune, http://parisar.org/what-we-do/analyses-reports/126-pune-walkability-survey, Accessed on August 13, 2015.

Parisar (2011). *Comprehensive Assessment of Cycle Tracks in Pune*, Parisar, Pune, http://parisar.org/what-we-do/analyses-reports/144-cycle-track-assessment, Accessed on August 13, 2015.

PMC (2008). *Comprehensive Mobility Plan for Pune City*, Pune Municipal Corporation, Pune, http://www.punecorporation.org/sites/default/files/road_img/1-iuisl_Pune-CMP-November-2008-chapters-1-6.pdf, Accessed on August 13, 2015.

PMC (2011). *Pune City Sanitation Plan 2011*, Pune Municipal Corporation, Pune, http://www.indiaenvironmentportal.org.in/files/DraftCSPPune_CSP.pdf, Accessed on August 1, 2015.

PMC (2012). *Revised City Development Plan for Pune – 2041 under JNNURM*, Pune Municipal Corporation, Pune, http://punecorporation.org/informpdf/CDP/Executive_Summary-Revised%20CDP.pdf, Accessed on July 25, 2015.

PMC (2014). *Budget Estimate 2014-15*, Pune Municipal Corporation, Pune, http://www.punecorporation.org/informpdf/budget/1415%20MC%20BUDGET%20BOOK.pdf, Accessed on July 15, 2015.

PMC (2015). *Budget Estimate 2015-16*, Pune Municipal Corporation, Pune, http://www.punecorporation.org/informpdf/budget/1516%20SC%20Budget%20Book.pdf, Accessed on July 15, 2015.

Root, A., L. Schintler and K. Button (2000). "Women, Travel and the Idea of 'Sustainable Transport," *Transport Reviews* 20(3), pp. 369-383.

Sandercock, L. and A. Forsyth (1992). "A Gender Agenda: New Directions for Planning Theory," *Journal of the American Planning Association* 58:1, pp. 49-59.

Sen, A. (1985). "Well-being, Agency and Freedom: The Dewey Lectures 1984," *Journal of Philosophy* 82 (4), pp. 169-221.

Sen, K. (2006). "Better to Have Died Than to Live Like This," *Economic and Political Weekly* 41(20), pp. 1969-1974.

Shelter Associates (2012). "BSUP in Pune: A Critique," Shelter Associates, Pune, http://shelter-associates.org/downloads/Research/Research_1.pdf, Accessed on November 2, 2015.

Singh, K. (2004). "Violence Against Women and the Indian Law,", in S. Goonesekere (ed) *Violence, Law and Women's Rights in South Asia*, New Delhi: Sage, pp.77-147.

Srinivasan, S. (2008). "A Spatial Exploration of the Accessibility of Low-income Women: Chengdu, China and Chennai, India," in T. Cresswell and T.P Uteng (eds), *Gender Mobilities*. Burlington, VT: Ashgate Publishing Co., pp. 143-158.

Srinivasan, S. and P. Rogers (2005). "Travel Behaviour of Low-income Residents: Studying Two Contrasting Locations in the City of Chennai, India," *Journal of Transport Geography* 13, pp. 265-274.

Tawa-Lama Rewal, S. (2011). "Women's Right to the City: from Safety to Citizenship," in Marie-Hélène Zérah, Véronique Dupont, Stéphanie Tawa Lama-Rewal (eds), *Urban Policies and the Right to the City in India: Rights, Responsibilities and Citizenship*, New Delhi: UNESCO and Centre de Sciences Humaines.

The Hindu (2015). "Government plans 20 million houses for urban poor," The Hindu, June 18, 2015, http://www.thehindu.com/news/national/housing-for-all-by-2022-government-plans-20-million-houses-for-urban-poor/article7326997.ece, Accessed on November 2, 2015.

TheHitavada (2015). "Scientific Segregation of bio-medical waste must," TheHitavada, http://ehitavada.com/hitavadanew.aspx?lang=6&NB=2015-08-03&spage=BCpage&SB=2015-08-03#BCpage_2, Accessed on August 12, 2015.

Tinker, I. (1997). "The Making of a Field: Advocates, Practitioners and Scholars," in N. Visvanathan, L. Duggan, N. Wiegersma and L. Nisonoff (eds) *The Women, Gender and Development Reader*, New Delhi: Zubaan, pp. 33-42.

Turner, J. and P. Fouracre (1995). "Women and Transport in Developing Countries," *Transport Reviews* 15(1), pp. 77-96.

UN DESA, UNDP and OHCHR (2015). *Habitat III Issue Paper 1 – Inclusive Cities*, New York: UN.

UN-Habitat (2006). *Poverty Mapping: A Situation Analysis of Poverty Pockets in Bhopal*, Nairobi: UN-Habitat, https://unhabitat.org/books/poverty-mapping-a-situational-analysis-of-poverty-pockets-in-bhopal/, Accessed on August 12, 2015.

UNIFEM (2005). *Tools for a Gender-Sensitive Analysis of Budgets*, New York: United Nations Development Fund for Women

UN Women (1995). *Beijing Declaration and Platform for Action – Beijing+5 Political Declaration and Outcome*, Presented at United Nations Fourth World Conference on Women, Beijing, China, September, http://www.unwomen.org/~/media/headquarters/attachments/sections/csw/pfa_e_final_web.pdf, Accessed on August 12, 2015.

UN Women (2012). *Critical Gender Concerns in Jawaharlal Nehru National Urban Renewal Mission*. New Delhi: UN Women.

Venter, C., V. Vokolkova and J. Michalek (2007). "Gender, Residential Location, and Household Travel: Empirical Findings from Low-income Urban Settlements in Durban, South Africa," *Transport Reviews* 27(6), pp. 653-677.

Visvanathan, N., L. Duggan, N. Wiegersma and L. Nisonoff (eds) (1997). *The Women, Gender and Development Reader*. New Delhi: Zubaan.

Woolf, V. (1929). *A Room of One's Own*, New York: Harcourt Brace.

World Bank (2010). *Social Development and Infrastructure: Making urban development work for women and men*, Washington, DC: World Bank.

Young, K. (1997). "Planning From a Gender Perspective: Making a world of difference," in N. Visvanathan, L. Duggan, N. Wiegersma and L. Nisonoff (eds) *The Women, Gender and Development Reader*, New Delhi: Zubaan, pp. 366-374.

Centre for Urban Equity (CUE) advocates a human-centered and equitable urban development paradigm. The activities of CUE are research, policy advocacy, training and capacity building and data documentation and dissemination. The centre is a National Resource Centre of Ministry of Housing and Urban Poverty Alleviation,

CEPT UNIVERSITY
| CENTRE FOR URBAN EQUITY

Kasturbhai Lalbhai Campus,
University Road, Navrangpura,
Ahmedabad - 380009. INDIA
Phone: (0) 91-79-26302470, 26302452 Ext: 149
Fax: (0) 91-79-26302075
E-mail : cue@cept.ac.in

CEPT University
Kasturbhai Lalbhai Campus, University Road, Navrangpura, Ahmedabad-380009