



SANITATION FOR ALL

An Assessment of Sanitation Services

JHANSI, UTTAR PRADESH



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PREFACE

Urbanisation is rapidly increasing in India. According to Census, in 1991, 220 million people or about one-quarter of the population lived in Indian cities. By 2011, this number increased to 377 million or one-third of country's population. The urban population is projected to grow to about 600 million (40 per cent) by 2031 and 850 million (50 percent) by 2051. While it is very difficult to get authentic, consistent and valid data on the extent of urban poverty in India, it is estimated that in 2014-15 approximately 140 million (nearly 35 per cent) of the urban population were considered to be poor. In 2012, an estimated 33,510 slums existed in urban India with approximately 8.8 million households.

Rapid urbanisation has led to a strain on civic services, in particular sanitation services. The abysmal lack of sanitation services is omnipresent in Indian cities and poses an extraordinary threat to the health and hygiene of the urban population, particularly the poor who live in informal settlements within cities. Census 2011 shows that close to 8 million, or 12 per cent, urban households do not have access to toilets and defecate in the open. Another 8 per cent use public and shared toilet facilities which are unclean and unhygienic. At the all-India level, 31 per cent of slums had no access to any kind of latrine, 71 per cent had no access to underground sewerage system, 31 per cent slums had no drainage system, 27 per cent had no arrangement for garbage disposal and 46 per cent slums faced water-logging (due to rainfall) of either the slum, or the approach road to the slum. Open defecation in urban settings with higher population densities and untreated sewerage is one of the biggest sources of water resource pollution in India. Lack of safe spaces poses further challenges, as it affords little dignity and grave security risks for women.

In order to reverse this situation, the Ministry of Urban Development (MoUD), Government of India introduced the National Urban Sanitation Policy (NUSP) in 2008. It was the first policy specifically addressing urban sanitation and recommended preparation of city sanitation plans on the lines of the national policy. In 2014, the Government of India launched one of its most ambitious programmes – Swachh Bharat Mission (SBM). SBM (Urban) targets all 4,041 Statutory Towns (STs). It aims to eliminate Open Defecation (OD), eradicate manual scavenging, and ensure modern and scientific municipal solid waste management.

In 2016, the MoUD launched Swachh Survekshan in which 73 cities were ranked. In 2017 the Swachh Survekshan was expanded to 500 cities in which 434 participated. While this effort provided gradation across various metrics related to sanitation services, it provided very little usable data and analysis to city authorities which would help cities plan for service improvements.

The study, “Sanitation for All: An Assessment of Sanitation Services in Jhansi, Uttar Pradesh” was undertaken by Participatory Research in Asia (PRIA) under the project “Engaged Citizens, Responsive City”. The project is supported by the European Union and being implemented in three Indian cities – Ajmer in Rajasthan, Jhansi in Uttar Pradesh, and Muzaffarpur in Bihar. The project aims to strengthen participation of the urban poor in city-wide planning and monitoring of urban sanitation services. One of the bottlenecks in city-wide planning of urban sanitation services is lack of authentic data. Municipalities often do not have the necessary capacities to generate updated data for realistic planning. This study is expected to fill this data gap in city-wide planning, with particular focus on the informal settlements in the city.

Dr. Kaustuv Kanti Bandyopadhyay

Director

Participatory Research in Asia

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दिनांक... 10.1.18

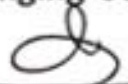


MESSAGE

Participatory Research in Asia (PRIA) has been working in Jhansi through its European Union supported "Engaged Citizens, Responsive City project" over the last two years. The project has particularly helped the residents of informal settlements get organised and contribute towards the improvements in the city. PRIA has often provided critical input to the municipality and is a member of the weekly officers meeting reviewing Swachh Bharat Abhiyan set up in order to improve city's sanitation services to the communities.

I am glad that PRIA has conducted an in-depth study on the sanitation facilities available in the city. The identified deficiencies will help the municipality provide a higher quality of service to the citizens. This citizen-generated data is important for city-wide planning, and PRIA's focus on the informal settlements (slums) in the city have helped us provide better sanitation services to them.

I convey my best wishes to PRIA for bringing out this report and congratulate them for this initiative


10.1.18

(Pratap Singh Bhaduria)
(P.C.S)

Municipal Commissioner
Municipal corporation-Jhansi





ACKNOWLEDGEMENTS

Rapid urbanisation has led to a severe strain on civic services and providers of these services, mainly municipalities or Urban Local Bodies (ULBs). It is estimated by 2051, half of India's population will be living in cities, which will make the job of municipalities an even harder task.

The approach of 'development through people's participation' is not widely utilised by municipalities in India. The absence of any institutional obligation to involve citizens in planning, implementation and monitoring of development programmes leads to lack of ownership among people towards their cities and the areas they live in.

The Society for Participatory Research in Asia (PRIA) uses citizen centric approaches to address this situation through the 'Engaged Citizens, Responsive City' (ECRC) project supported by the European Union. PRIA's focus on people's participation is pivotal given the prevailing situation in India's cities.

Data is a critical requirement to effectively seek interventions from municipalities, but is usually inadequately available at the granular level. Data sources like the Census of India are difficult to utilise for planning because collection is decennial, and information at the level of the ward, colony, and slum is not always provided. Such limitations deter citizen participation as lack of access to data prevents understanding or monitoring of real situations at local, state and national level. For cities to develop, a critical requirement is that of close coordination between the poor, the middle class, municipality and other State stakeholders. PRIA believes that one of the first steps towards participatory planning and decision-making is to empower communities with critical data.

To meet this goal, PRIA designed a mobile based survey and systematically sampled 100 households from each of the 60 wards in Jhansi. A mix of colonies and slums were selected to ensure proportionate representations.

The current study was undertaken by PRIA in Jhansi. We acknowledge the support of our field team in Jhansi consisting of Sudhir Singh, Suruchi Sharma and Pooja Singh. We are grateful to our dedicated data collection team which includes Gaurav, Shubham (Kanchan), Satyam, Deepak, Kaushar, Neha, Savita, Juli, Mahendra, Sahil, Rupam, Rajeev, Pavan, Pratibha, Irfan, Nagma, Rajesh and Amit. This process was supervised by Omkar, Satish, Pooja, Satyam, Sanjay, Birjesh, Rajni, Seema, Shubham (Sharma), Saroj and Ragini. Nikhil Desai, as the technical consultant, has provided valuable technical

support to mobile based survey and handling of data. We sincerely acknowledge his contribution. The team at Dimagi enabled us to effectively manage our data and provided useful support. Kaustuv Kanti Bandyopadhyay, Director, PRIA provided the direction, guidance and leadership for which we are sincerely grateful. Sumitra Srinivasan and Seetha helped edit this report and make sure that it is free of errors. Shri Pratap Singh Bhadauria (PCS), Commissioner, Jhansi Municipal Corporation (JMC) has kindly granted us his time and support. We acknowledge the support of Shri Rohan Singh, Ex Acting Deputy Commissioner, Shri Ravi Nirajan, Chief Sanitation Inspector, Dr. Rakesh Babu Gautam, NSA, Shri Mahesh Verma, Zonal Sanitary Officer, Shri Rakesh Sahu, IT and M&E Specialist and Shri Manoj Srivastava, Sanitation Inspector.

Lastly, this report would not have been possible without the direction provided by Dr Rajesh Tandon, President, PRIA. We sincerely acknowledge his contribution.

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LIST OF ACRONYMS

AMRUT	Atal Mission for Rejuvenation and Urban Transformation
APL	Above Poverty Line
BPL	Below Poverty Line
DUDA	District Urban Development Authority
ECRC	Engaged Citizens, Responsive City
EU	European Union
Gol	Government of India
HRIDAY	Heritage City Development and Augmentation Yojana
JMC	Jhansi Municipal Corporation
km	Kilometre
sq. km.	Square Kilometre
MoUD	Ministry of Urban Development
NGO	Non-Government Organisation
OBC	Other Backward Classes
PRIA	Society for Participatory Research in Asia
RAY	Rajiv Awas Yojana
SBM	Swachh Bharat Mission
SBM-U	Swachh Bharat Mission-Urban
SWM	Solid Waste Management
SC	Scheduled Caste
SIC	Settlement Improvement Committee
SLB	Service Level Benchmark
ST	Scheduled Tribe
ULB	Urban Local Body

KEY FINDINGS

CITY PROFILE¹

Population	505,693
Households	365,407
Wards	60



SAMPLE²

Total HHs ³	6,582
Colony HHs	6,370
Slum HHs	212

Female respondents 43%

Religion	82%	17%	1%
	Hindu	Muslim	Others

Duration of survey December 2016 to May 2017

City coverage **60 wards**, with a minimum sample of **100 HHs** from each ward



1. According to Census 2011.

2. Representation is at the level of colony, slum, and city – which is a combination of colonies and slums.

3. Households.

SOCIO-ECONOMIC BACKGROUND



HH ownership

Owned	91%
Rented	9%

TOILET FACILITIES

Access to IHHL⁴

Colonies	89%
Slums	60%
City HHs with toilet outlets connected to <i>nallahs</i> outside house	1%
City HHs with toilet outlets connected to septic tank	91%

Open defecation in slum HHs 8%

Reasons for lack of IHHL

Insufficient funds	87%
Lack of awareness about procedure	13%
Insufficient space	5%
Insufficient water	12%

Acceptance of applications received from city HHs by municipality 59%

HHs where septic tank has never been cleaned

Colony	86%
Slum	88%

City HHs where cleaning was carried out using manual methods 54%



4. Individual Household Latrine.

SOLID WASTE MANAGEMENT

Waste segregation at source done by 17% of city population

Type of waste generated
in city HHs

Hazardous	98%
Sanitary	98%

Door to door waste collection
in HHs

Colony	65%
Slum	45%



City HHs making payments
for waste collection 46%

DRAINAGE

Waste water from kitchen and
bathroom flowing into open areas
outside city HHs

1%

Maintenance of drainage connections
in city HHs by municipality

86%



WATER SUPPLY

City households accessing government
household piped connections

51%

Availability of supply to city HHs

7 days

1-2 hours per day

Satisfaction with availability

Colony	86%
Slum	84%

Top three uses of water
in city HHs

Washing clothes	81%
Drinking purposes	51%
Toilet usage	76%



BATHING FACILITIES

Availability in HHs

Colony	99%
Slum	98%



COMPLAINT REDRESSAL

Solid Waste Management



HHs complained about lack of service provisioning

Colony	5%
Slum	7%

Complaints received from HHs 310

Complaints not resolved 305 (98%)

Complaints resolved 5

Nature of complaints:

No street sweeping

Colony	97%
Slum	100%

Lack of dustbins nearby

Colony	30%
Slum	40%

81% of the complaints were made by visiting the local counsellor individually/ collectively.

COMPLAINT REDRESSAL

Drainage⁵



HHs complained about lack of service provisioning

Colony	5%
Slum	3%

Complaints received from HHs 274

Complaints not attended to 260 (95%)

Complaints attended to 14

Complaints resolved 13

Nature of complaints:

Erratic cleaning

Colony	87%
Slum	100%

Water logging

Colony	30%
Slum	60%

84% of the complaints were made by visiting the local counsellor individually/collectively.

5. While the full sample of 6,582 was asked questions pertaining to SWM complaint redressal, only 5,689 HHs were asked questions about complaints regarding drainage and water outlets. 5,689 is the number of HHs whose maintenance is managed by State agencies including the municipality.

Section 1

INTRODUCTION



City Profile

The historic city of Jhansi, in the southern extreme of Uttar Pradesh, is the cultural and economic hub of the Bundelkhand region. It has also, in recent years, been selected for national schemes like the Smart City Mission and Atal Mission for Rejuvenation and Urban Transformation (AMRUT).

The average decadal growth rate of Jhansi, according to Census (2011) between 1991 and 2001 was 36 per cent, which dropped to 19 per cent between 2001 and 2011. An area of 150 square kilometres falls under the Jhansi Municipal Corporation and, according to Census 2011, the population of Jhansi city is 505,693, which is expected to rise to 604,349 by 2020.

The average density of the city is 398 per square kilometre (sq. km.) which is less than the state average of 829 persons per sq. km. (Census, 2011). The city has some high density pockets in inner city that include Gudri, Kushtiyana,

Nayi Basti, Sarai, Madakhana, Datiya Gate (Outside), Pachkuiyan, Daru Bhendala and Aligole. Low density areas include Bijouli, Picchor, Bileshwar and Gariganw which are on the borders of the city. Increasing population has forced development in the outer areas of the city. The newer areas of the city include Hasari, Bhagwantpura, Kochabhawar, Simardha, Pal Colony, Budha, Karari and Gadiya Gaon.

The most densely populated wards are in the inner city. In areas of high concentration like Ward No. 08, 10, 16, 29, 31, 32, 41, 44, 45, the population density is higher, which is one of the factors contributing to sanitation problems and poor quality of life in these areas.

The literacy rate in Jhansi, at 83.02 per cent, is higher than the state literacy rate of 67.68 per cent. The male literacy rate is 88.90 per cent and female literacy rate is 76.57 per cent (Census 2011).



Slum Profile of the City

According to Section-3 of the Slum Area Improvement Act, 1956, an area is considered as a slum if the majority of the buildings in the area are "...in any respect unfit for human habitation

by reasons of dilapidation, overcrowding, faulty arrangements and designs of such buildings, narrowness or faulty arrangement of streets, lack ventilation, light, sanitation facilities or any

combination of these factors which are detrimental to safety, health and morals” (Census of India, 2013). The records of 1998 of the District Urban Development Authority (DUDA) show that Jhansi city has seventy-five slums. However, given the actual condition of many localities and the houses there, they may not fall into the category of slums (which usually implies factors like dampness, lack of water and electricity supply, shanty lanes, etc.). Approximately three-fourth of the listed slums can no longer be considered as slums as the facilities in these localities have considerably improved. These slums had become colonies inhabited by either middle class or lower middle class families. Only around one-third localities listed as slums under DUDA can still be considered as slums.

Some of these slums are more than three to four decades old. These are located on lands owned mostly by private individuals. Most of the residents bought land several years back and constructed kutcha houses. With time, they have been able to incrementally improve their houses using concrete materials. Government services too have been reaching these areas more efficiently.

Newly migrated settlers in the city form the slums in the outer areas of Jhansi. The migrants come mostly from the adjoining districts of the state as well as Madhya Pradesh. These settlers are involved in construction work, brick making, stone work, mobile hawker shops, driving tempos and autos, *bidi* making and other daily wage work.



Other Services

In 2011, the Rajiv Awas Yojana made efforts to organise the communities of Jhansi and provide them houses to reduce their economic vulnerability. Besides, the state government’s scheme called Manyawar Shri Kanshiram Ji Shahri Garib Awas Yojana gave houses free of cost to people from the economically weaker sections in Jhansi. These houses were located near the engineering college and Pal Colony area. Further, the National Urban Livelihood Mission operating through the DUDA has been giving vocational

training in computer and mobile skills, beautician training, etc. to people from all sections of society. This scheme has targeted youth from twelve to thirteen wards across Jhansi. Individual and community toilets are being built across the city through Swachh Bharat Mission - Urban (SBM-U) while efforts at creating parks around the city are under way through AMRUT.³ These efforts have been aimed at providing better sanitation services as well as to improve the environmental conditions of the city.



The Sanitation Survey

The current survey on the sanitation situation in Jhansi city was undertaken by the Society for Participatory Research in Asia (PRIA), New Delhi under the European Union (EU) supported project “Engaged Citizens, Responsive City” (ECRC). This activity was carried out between December 2016 and May 2017.

The objective of the ECRC project is to enhance capacities of the urban poor to increase their participation in planning and monitoring of sanitation services in three Indian cities – Ajmer in Rajasthan, Jhansi in Uttar Pradesh, and Muzaffarpur in Bihar. The capacities of the urban poor to engage with municipalities for enforcing

³ Information based on interviews with local counsellors at JMC.

accountability and ensuring their participation in city planning are significantly affected by two major constraints: (i) lack of information and (ii) access to organisation. The fragmentation of civil societies of the urban poor across caste, gender, age, and political affiliations severely affect their ability to demand quality services from the institutions of governance.

Rapid and unplanned urbanisation has led to a severe strain on civic services. Municipalities are often unable to cope with the increasing population, which is expected to further increase in the future. In the absence of appropriate capacities, resources and any institutional obligation, municipalities often do not engage citizens in planning, implementation and monitoring of development programmes. This leads to lack of ownership by the citizens towards their cities and the areas they live in. Further, citizens, particularly the urban poor, lack basic knowledge, which would allow them to better understand entitlements at the individual, household, and community levels. This is witnessed most starkly in the state of sanitation services in Indian cities. City-wide improvement of sanitation services requires preparing a solid plan based on authentic data. Lack of reliable data is a perpetual problem for preparing appropriate plans by municipalities in India.

The ECRC project makes conscious efforts to strengthen citizen participation in development planning and monitoring in cities. The ECRC project makes sanitation services the entry point to build organisational capacities of the urban poor in informal settlements. The residents in informal settlements are encouraged to form Settlement Improvement Committees (SICs) with leadership from youth and women. The project engages multiple stakeholders including the Resident

Welfare Associations (RWAs) in colonies, market committees, professional associations, media and academia to collectively explore solutions to problems of urban sanitation services in cities. It aims at creating a common forum for engagement among various stakeholders, especially between Urban Local Bodies (ULBs) and the residents.

Reliable data is a critical requirement in effectively seeking interventions from municipalities. However, such data is usually scarce, especially for informal settlements.

In order to fill the data gap, the ECRC project undertook a sample survey covering all the wards in Jhansi. This has allowed for a holistic understanding of the city. Through this survey, deficiencies in sanitation services have been highlighted, solutions to which can stem from a coordinated effort between municipalities and residents. The dissemination of findings of the survey could help establish a platform for residents of the ward to congregate and pursue a common interest that furthers that of the city as well.

The survey initiative is also in line with the objectives of the SBM-U and acts as an assessment of the ground realities in Jhansi city. It can provide critical feedback and play an essential role in monitoring and evaluation of government schemes as well as implementation of plans. That apart, the survey has identified relevant aspects through Service Level Benchmarks (SLBs), which are defined as a minimum set of standard performance indicators that are commonly understood and used by all stakeholders across the country. SLBs encourage municipalities and utilities to collect data to report performances. However, the feedback process does not involve citizens. To a certain extent, this survey addresses this gap.







Section 2

METHODOLOGY



Objectives

The objective of the survey was to assess the status of sanitation services in Jhansi city, with specific focus on toilets (individual, shared and community), sewerage and waste water management, and solid waste management. This information is available at the level of the city, ward and settlement, including colonies and slums. Since water supply is an integral part of the overall sanitation situation in a city, the survey

included the key sources of water supply for drinking and other purposes. Provisions for street sweeping and complaint redressal were covered as well. The findings of the survey generated reliable data and provided critical analysis to the Jhansi Municipal Corporation. It is envisaged that such data and analysis would provide a sound basis for ongoing and future sanitation planning in Jhansi city.



Designing the Questionnaire

The survey used a structured questionnaire with answers from multiple choices. The administered questionnaire is divided into the sections as presented in Figure 1 for ease in filling and analysis. While the thrust of the questionnaire

was to gauge the level of sanitation facilities in the city, it has also captured basic information about households, which is often important for correlation analysis.



Selecting and Orienting the Survey Team

Twenty-four participants were shortlisted from various informal settlements and other forums in which PRIA engages. Many of these participants

were well versed with PRIA's work in the city. They were divided into two categories – enumerators and field supervisors – depending on their skill

Figure 1: Various Sections in the Survey Questionnaire

Registration form	<ul style="list-style-type: none"> • Ward selection • Classification of settlement • Basic details including name of respondent, head of household, address
Basic household information	<ul style="list-style-type: none"> • Type of house • Ownership and registration of land • Family income • Religion and caste • Distance from basic facilities including primary health centre, anganwadi centre, ration-shop, and primary and secondary schools
Drainage	<ul style="list-style-type: none"> • Availability of drainage facility and its type • Maintenance of drainage facility and associated costs • Grievance redressal mechanism
Solid waste management	<ul style="list-style-type: none"> • Types of solid waste generated and segregation • Mechanisms for waste collection, disposal, and associated costs • Street sweeping facilities • Grievance addressal mechanism
Water related facilities	<ul style="list-style-type: none"> • Availability of water and sources • Utilisation of water in various activities
Bathing and washing	<ul style="list-style-type: none"> • Type of bathing facility available and its utilisation • Maintenance of bathing facility and associated costs • Grievance addressal mechanism
Toilet and sewerage	<ul style="list-style-type: none"> • Type of toilet facility available and its utilisation • Maintenance of toilet facility and associated costs • Grievance addressal mechanism
Conclusion	<ul style="list-style-type: none"> • Suggestions on improvement of municipal services • Photo capture • Enumerator comments • GPS coordinates

sets, which were assessed over the course of the workshop that was organised to orient them on survey objectives and methods. Separately, one survey administrator, supported by an animator, assigned from PRIA oversaw the process.

The training workshop was an intensive four-day long event. It focussed on two major areas: (i) building a strong conceptual understanding of sanitation, drinking water sources, waste water outlets, street sweeping, and solid waste management; (ii) developing conceptual understanding and skills on survey methodology and the corresponding approach to be applied on the field. This was followed by a discussion on how to approach respondents and introduce

the organisation, as well as the objectives of the survey. The workshop employed a mix of pedagogies including presentations, interactions, open discussions, simulations and fieldwork, during which enumerators could utilise the application on smartphones. Surveys were conducted using a mobile-based technology called CommCare, designed by Dimagi. CommCare is an open source mobile data collection platform that allows users to code a questionnaire into the application, which is accessed and filled using android mobile phones. The application can be used offline (in areas where internet is not easily available) and is compatible with various languages, including Hindi. There are many benefits of using a tech-enabled solution which are detailed in Annex 1.



Sampling Process

The implementation of a large-scale survey requires rigorous monitoring and quality assurance. One of the first steps spelt out in detail to all the team members was the sampling process. A stratified sampling technique was used. A sample of 100 households was selected from each ward, with a buffer of 10 per cent. The buffer allowed discarding of records that contained errors which could not be addressed easily. Sample households would be spread across neighbourhoods such as authorised colonies (including resettlement colonies), and slums (both notified and non-notified). A good sample ensures that the survey is representative and captures data that the survey aims to study. A critical point here was to ensure that the sample ratio of colonies to slums be maintained across the wards. To do this, a list of colonies and slums in each ward was prepared with approximate number of households.

However, often government lists, especially such as slum lists are dated and do not capture the reality of these settlements. Therefore, to ensure authenticity, our teams selected slums on the basis of actual slum-like characteristics which were visually obvious instead of pre-established lists. Slum like characteristics such as the lack of water outlets, severe open defecation, lack

of waste collection and other sanitation services were the basis for categorising areas as slums or non-slums. This was important as the number of slums in Jhansi are very limited in reality.

The next crucial step was to calculate the skip interval. This is dependent on the number of households in a ward, divided by the sample (fixed at 100). For example, if the total number of households in a ward is 900, and the required sample is 100, then the skip interval is calculated as $900/100$, which is equal to 9. A sampling plan is provided in Annex 2. Household selection utilises the right-hand technique, in which the first house is selected randomly. Beginning from a particular corner of the sampling unit, the skip interval is followed by moving right, with every ninth house in the direction being selected. For example, if one lane is being surveyed, then households on the right will be sampled first. Once the entire right-hand side has been completed, enumerators will start covering households from the end of the left side of the lane, which now lies on their right-hand side. In case a particular house cannot be surveyed, the next house is selected. This process is simple to follow, and allows for a systematic sampling method, irrespective of the topology and spatial spread found in a city.



Survey Monitoring

The survey team comprised of enumerators, field supervisors, survey administrators and a survey manager. The monitoring process was divided into various stages. Each supervisor was allotted a team of enumerators. The supervisor accompanied the team and ensured that the surveys were being done in an orderly manner, and that the sample plan was being adhered to. Supervisors were also well versed with the questionnaire and were available to

solve any doubts raised by enumerators or respondents.

As stated above, two individuals from PRIA (a survey administrator and one person for support) took responsibility for validating the data, according to a monitoring protocol design based on common errors and discrepancies. Data was to be validated for each ward and records, which were inconsistent or incomplete, were flagged for removal or remedy.

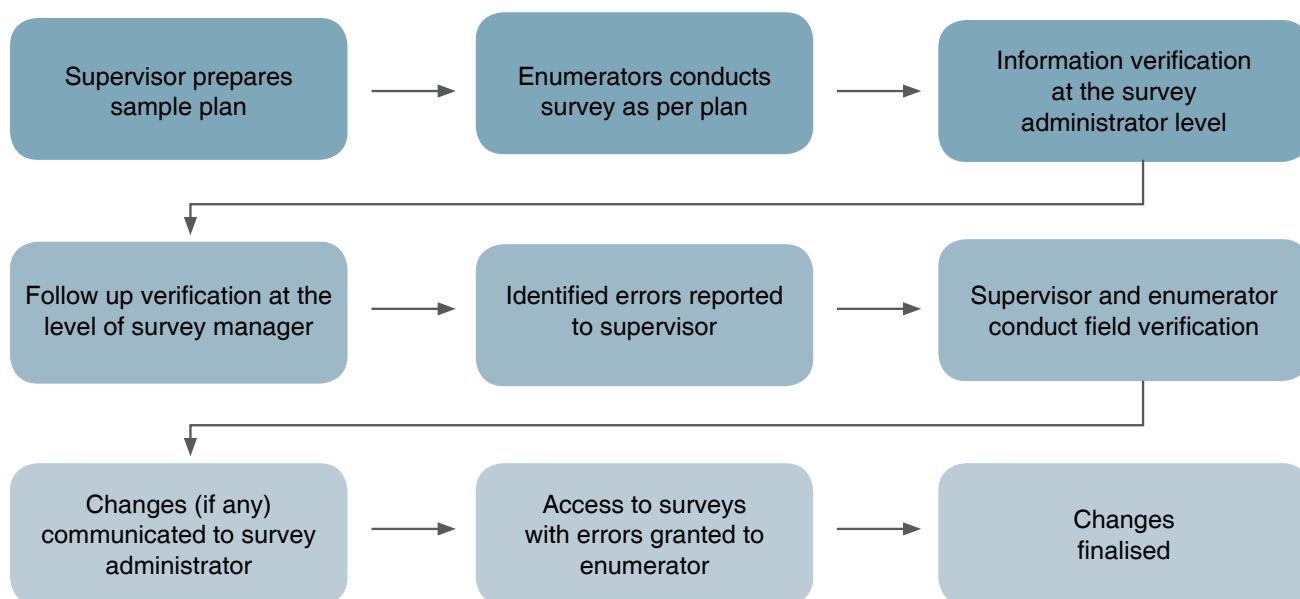
Data for each ward was then accessed by a survey manager, where logical consistency of answers would be checked. All inconsistencies were reported back to the field and an immediate verification carried out either by revisiting the respondent's home or by calling them. This task was carried out by supervisors and enumerators. Any suggested changes were made by the enumerator on the mobile. To do this, survey administrators would grant access to the particular record so that it could be edited.

The next step after implementation and monitoring was interpretation of survey findings. The ECRC

analytical framework has been designed in Microsoft Excel and has been used to analyse the survey findings and the inferences outlined in this report.

After multiple rounds of verification, a total of 6,582 household records, spread across 60 wards were included in the analysis. Of these, 6,370 (96.7 per cent) households belonged to colonies and 212 (3.2 per cent) belonged to slums. All the slum households belonged to notified slums only. A minimum of 100 surveys were conducted across each ward, with a buffer being maintained so that surveys with technical or factual anomalies could be discarded.

Figure 2: Survey Implementation and Monitoring



Section 3

SURVEY FINDINGS

In this section, analysis is presented with disaggregated data from the slums and the colonies. In some places, the analysis is presented on a city-wide level, which is a combination of data from slums as well as colonies. The sample of 6,582 refers to the city as a whole. Certain tables indicate problems and practices disaggregated by ward. In these tables, listings are in decreasing order of occurrence.



Demographic and Socio-Economic Background

Respondents

Head of the households answered 58 per cent (3,791) of surveys, while other family members including parents, sons, daughters, sons-in-law, grandchildren and, in a few cases, other relatives answered the remaining surveys.

House ownership

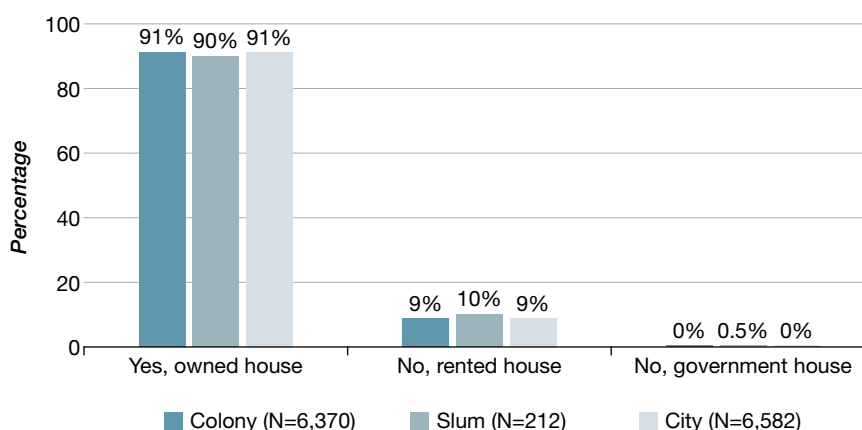
Of the 6,582 households surveyed, 91 per cent (5,993) of the city respondents owned the houses they lived in, while 9 per cent (569) lived on rent. A few respondents lived in government quarters. Among the slum households, 90 per cent (190) of

the houses were owned by its residents while 91 per cent (5,803) houses were owned by residents in the colonies.

Type of house

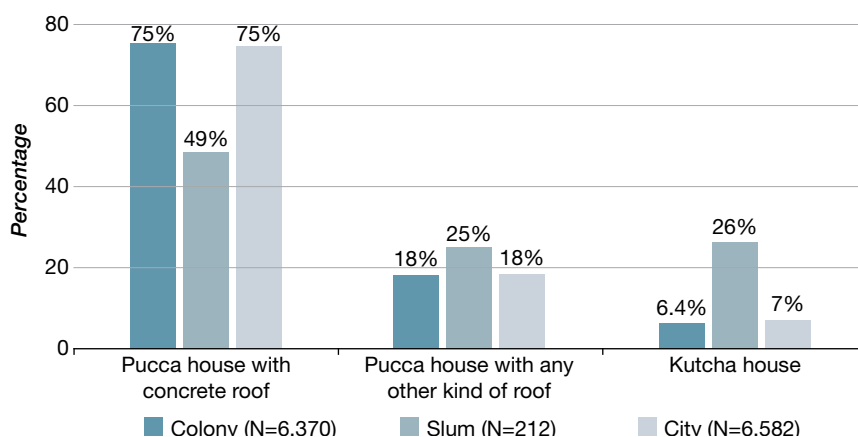
Approximately 93 per cent of households surveyed were *pucca*⁴ while 7 per cent were *kutcha*. Interestingly, 405 *kutcha* houses are located in colonies. This could be because most of these houses are owned by people with low income or because the owners in colonies inhabited by migrant populations may not be interested in investing to upgrade their property because of short or limited stay periods and property value

Chart 1: Ownership of Houses (N=6,582)



⁴ Households using concrete and/or other materials of solid nature have been combined as 93 per cent, but are separately depicted in the graph.

Chart 2: Type of Houses (N=6,582)



returns from tenants. In addition, many households refuse to renovate their houses for emotional reasons (they are attached to the old house) or to prevent division of property between the families. Another reason could be that the house is rented out to tenants. In a few cases, land entitlements have been contested because of which the construction of permanent structures is disallowed. Some households also belong to areas that lie in the outskirts of the city and were included into the municipal limit only after the last delimitation process (in October 2005) and typically witness slower development.

Years of stay

Across slums and colonies, 15 per cent of households have been living in their place of residence for less than ten years. Another 15 per cent of households reported that they had occupied their dwellings for periods between ten and nineteen years. The next 30 per cent of households have occupied their dwellings for periods between twenty and thirty-nine years. The remaining 40 per cent have been staying in their localities

Table 1: Years of Stay

Years of stay	Count
0–9 years	955
10–19 years	974
20–39 years	1,981
40 years and above	2,672

for over forty years. Large parts of the old city are situated around the periphery of the Jhansi fort, and many generations continue to live on in the same houses, in some cases, for more than 100 years.

Land Ownership

As elaborated earlier, 90 per cent (190) of all the slum households (212) were owned by its respondents. Within this sample, 77 per cent (145) have registered lands, while 3 per cent (6) have *pattas* (land tenure). A significant percentage – 20 per cent (38) – of slum households did not have any documents that helped secure tenure rights. Assigning property rights is a critical step in empowering people and helping them live better

Chart 3: Availability of Land Patta (N=190)

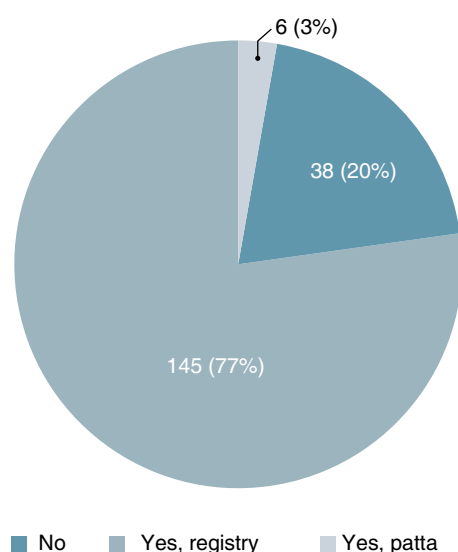
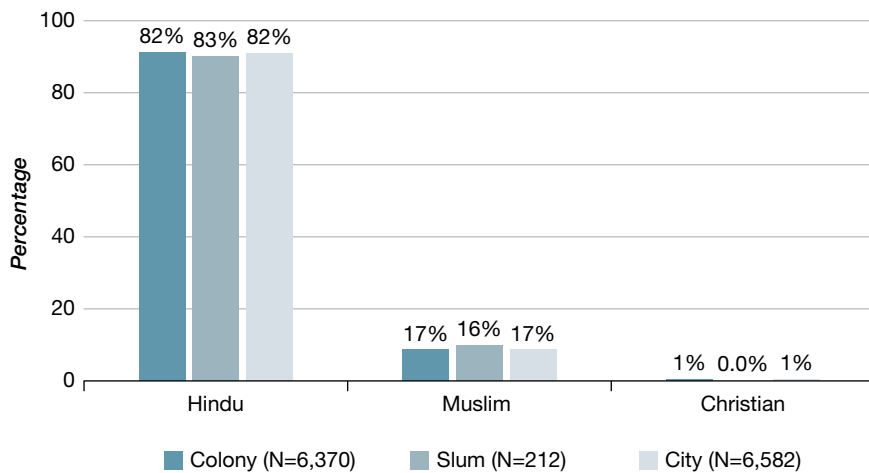


Chart 4: Religion of the Households (N=6,582)



lives. Without these rights, residents are hesitant to invest in better standards of living since they fear the risk of displacement. Allotting property rights to the urban poor, however, is difficult to implement since slums often come up on disputed land. An interim solution could be granting 'use rights' that could enhance a feeling of security of tenure. ULBs could guarantee a hold on eviction even as they extend basic services to the area, which would make people interested in investing in their houses.

Religion and caste

Similar to the findings of 2011 Census (91.26 per cent Hindu and 7.40 per cent Muslim), the survey respondents were predominantly Hindu (82 per cent or 5,383 households). In slums, 16 per cent (34) of respondents were Muslim,

which is slightly lower than the 17 per cent in colonies. Other religions include Sikh, Christianity and Jainism.

Twenty-five per cent (1,675) of the households surveyed in the city belonged to the general category – a figure highly influenced by surveyed households in colonies. This is clear from the fact that colonies have 26 per cent (1,653) general category respondents while the number is significantly lower for the slum respondents at 10 per cent (22).

As per Census 2011, Scheduled Castes (SC) constitute 28.14 per cent of the city's population, which is close to the number the survey analysis has generated as well. While 27 per cent (1,781) of surveyed households fall in the SC category, this number is influenced by the higher number of

Chart 5: Type of Ration Card (N=6,582)

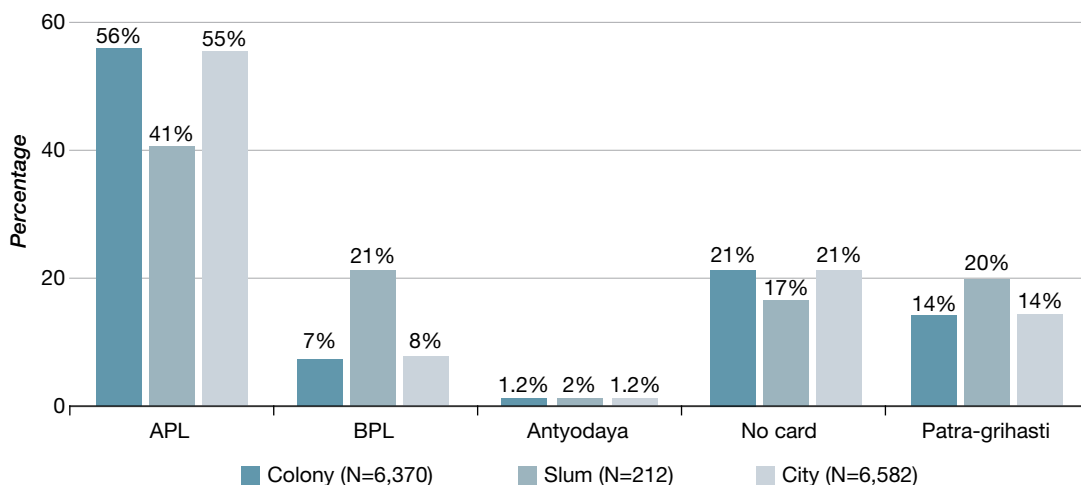
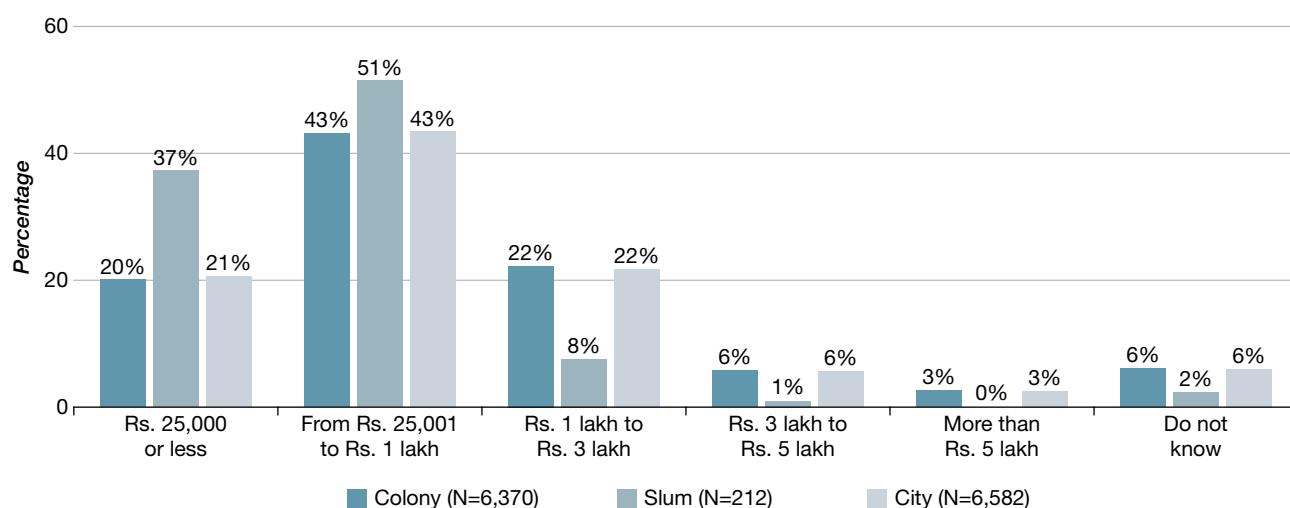


Chart 6: Annual Income of Households (N=6,582)



SC households in the slums at 45 per cent (95). In comparison, only 26 per cent (1,686) of households belonging to colonies fall in the SC category.

Forty-seven per cent (3,079) of households belong to Other Backward Classes (OBC), and this is because 53 per cent (601) slum households surveyed belong to this group. In the colonies, 41 per cent (2,478) of households belong to the OBC category.

Findings for the Scheduled Tribe (ST) category are also in line with the Census 2011 report, which places the ST population at 0.19 per cent for the city. As per the survey findings, in both colonies and slums, 1 per cent households belong to the ST category. The number of households is thirty-nine in the case of colonies and eight in the case of slums.

Ration card and income

Among the 6,582 households surveyed in the city, 78 per cent (5,189) had ration cards. In colonies, 56 per cent (3,561) households had Above Poverty Line (APL) cards, while an approximate 7 per cent (468) had Below Poverty Line (BPL) cards. In the slums, 41 per cent (86) had APL cards, whereas

21 per cent (45) had BPL cards. It must also be noted that 14 per cent households across the city confirmed that they had converted their APL or BPL cards to *Patra-grihasti card*⁵ – a process currently under way in Jhansi.

Annual income figures provided by households more or less correspond with the type of ration cards available. However, respondents are often uncomfortable answering this question and often under-report their income. To work around this, the survey asked respondents to choose from given income ranges, rather than state actual figures.

The dominance of slum households at 37% (79) in the lower income bracket of Rs. 25,000 or less over colony households gives an insight into the prevalence of lower paying/ informal jobs in slums. The presumption is confirmed further by 51 per cent (109) slum households falling between Rs. 25,001 and Rs.1 lakh. The figure for the next income bracket (Rs. 1 lakh to Rs. 3 lakh) in slum households falls significantly to only 8 per cent, exhibiting the dominance of colony households securing better paying jobs while standing at 22 per cent (1,416) in the same bracket and 6 per cent (369) colony households falling in the bracket between Rs. 3–5 lakh.

⁵ 'Priority' and 'non-priority' ration cards are replacing BPL and APL ration cards under the National Food Security Act 2013. These are Patra-grihasti cards, which decide the quantum of ration based on the eligibility of each household.



Solid Waste Management

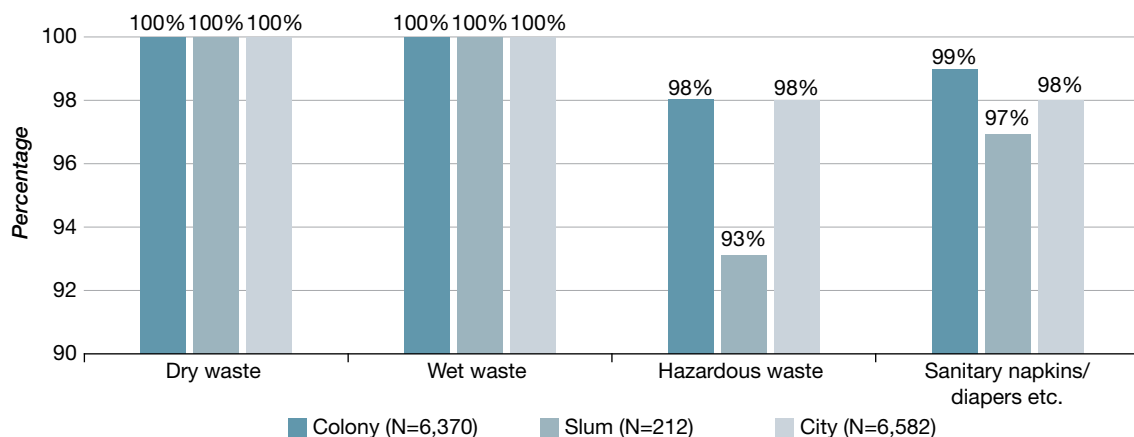
Jhansi Municipal Corporation (JMC) has prioritised its focus on and started a door-to-door household waste collection drive in all sixty wards of the city. It has contracted six agencies who collect waste from each house daily at the rate of Rs. 40 per month. However, not all households end up paying this fee. The segregation of dry and wet waste is being carried out in twelve wards by an NGO called Muskaan Jyoti and there is an ongoing effort at converting the wet waste collected from these wards into manure. Apart from these twelve wards, behaviour change and awareness raising campaigns are being carried out in the remaining wards. All sixty wards are served by waste collecting vans of contracted private agencies and while these vans have separate sections for wet and dry waste, both kinds of waste are dumped together in the dumping ground since a waste treatment plant is still in the pipeline.

Survey findings indicate that all households in the city generate both dry and wet waste (Chart 7). Ninety-eight per cent (6,442) households in the city generate hazardous

waste. In both colonies (98%) and slums (93%) households confirmed generation of hazardous waste after rounds of verification and probing during the survey. This also generated much needed sensitisation about what is hazardous waste as most households did not realise the difference and bundled hazardous waste with other types of waste. High usage of electronic equipment (resulting in disposal of used batteries), toys, syringes, etc. are equally prevalent across the city households and the need to handle this waste separately and carefully should be addressed through an awareness raising campaign by the municipality.

A question was also posed regarding sanitary waste. Ninety-seven per cent in slums and 99 per cent households in colonies said sanitary waste was generated. It is important to keep in mind that this does not necessarily mean usage of sanitary pads. Sanitary waste can refer to the usage of diapers as well as cloth-based solutions for both women and children. Similar to hazardous waste, initiatives are required for segregation of sanitary waste which will make disposal easier for those handling it.

Chart 7: Types of Waste Generated in Households (N=6,582)



Segregation of waste

Despite negligible behaviour change campaigns, 17 per cent (1,076) of the surveyed households in the colonies and 12 per cent (26) households in slums segregate waste at source. Segregation does not necessarily mean that waste is collected in a segregated manner, or that composting is practised. Segregation may also not necessarily mean separating wet and dry waste, in these cases. Many households said that they segregate plastics, paper and cardboard for reutilisation as well as to sell to trash collectors (*kabadiwalas*).

Collection of waste

In the city, 64 per cent (4,245) households have some kind of arrangement for collection of waste from their homes. In the case of slums, it is only 45 per cent (95)⁶ compared to colonies where it rises to 65 per cent (4,150).

Of the 4,245 households who had arrangement for collection of waste, 58 per cent (2,400) in colonies and 63 per cent (60) in slums said that

this was done by the municipal corporation. In Jhansi, NGOs and other organisations like Muskaan Jyoti Samiti, Arva Associate Jhansi, S.R. Techno Gwalior, Om Motors and Construction Jhansi, Society for Education and Welfare for All, Jhansi and J.R.M Group Jhansi play a significant role in the collection of waste from households. Forty-one per cent city households utilise the services of such NGOs as well as other private services.

Chart 11 shows that 91 per cent (3,761) households in colonies and 89 per cent (85) in slums reported waste collection on a daily basis. Seven per cent households in colonies (275) and slums (7) said that waste is being collected on alternate days. Two per cent households across the city complained that there was no fixed schedule.

A total of 2,337 households surveyed did not receive household waste collection services from the municipality. Twenty per cent (434) of colony households and 15 per cent (18) of slum households reported that they dispose waste in dustbins installed by JMC. Four per cent

Wards Practicing Waste Segregation

25, 28, 42, 48

Chart 8: Segregation of Various Wastes into Separate Dustbins (N=6,582)

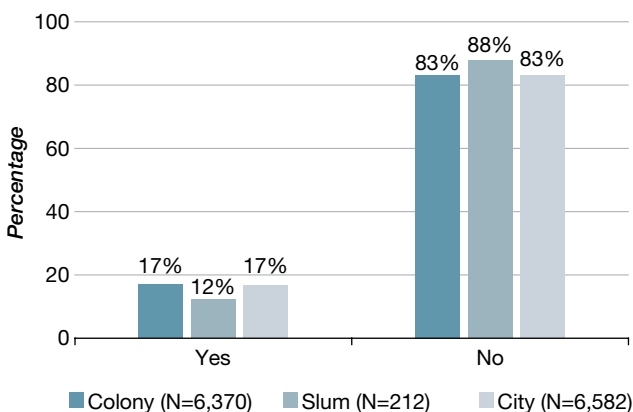
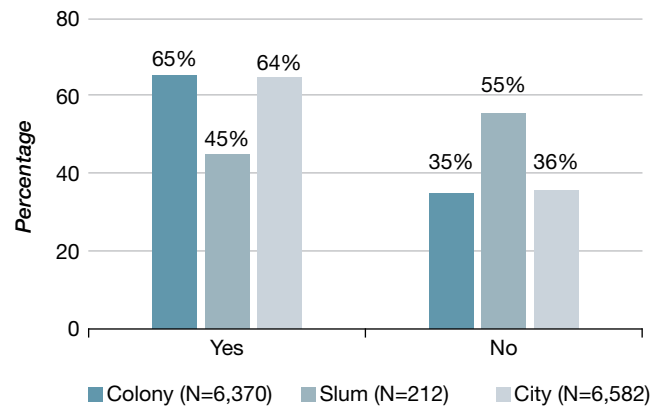


Chart 9: Availability of Households Waste Collection Facility (N=6,582)



⁶ Door-to-door collection of waste through Muskaan Jyoti NGO has been facilitating this. Hence, the above findings may have changed.

households across the city utilised dumping sites marked by the municipality and 2 per cent households threw waste at near by waste collection centres. A significant 88 per cent of city households reported some form of unsanitary waste disposal practice – in open spaces, ponds or nallah, in streets, as well as burning of waste – which can lead to hygiene problems. As chart 12 shows, these practices, cumulatively, are more common in colonies than slums.

Five hundred and seventy seven households (that utilised dustbins or dumping sites marked by JMC) were asked to report on the distance of dustbins and waste collection facilities from their house. A majority of households, 73 per cent (421) across the city reported distances to be less than 100 meters. Twenty-six per cent (148) across the city said the said the distance was between 100–500 meters, while the rest said it was more than 500 meters and more (Chart 13).

Wards Practicing Open Disposal of Waste (in open spaces/in ponds/on the street) 1, 2, 8,10, 11, 13, 15, 17, 23, 24,

Chart 10: Type of Household Waste Collection Facility (N=4,245)

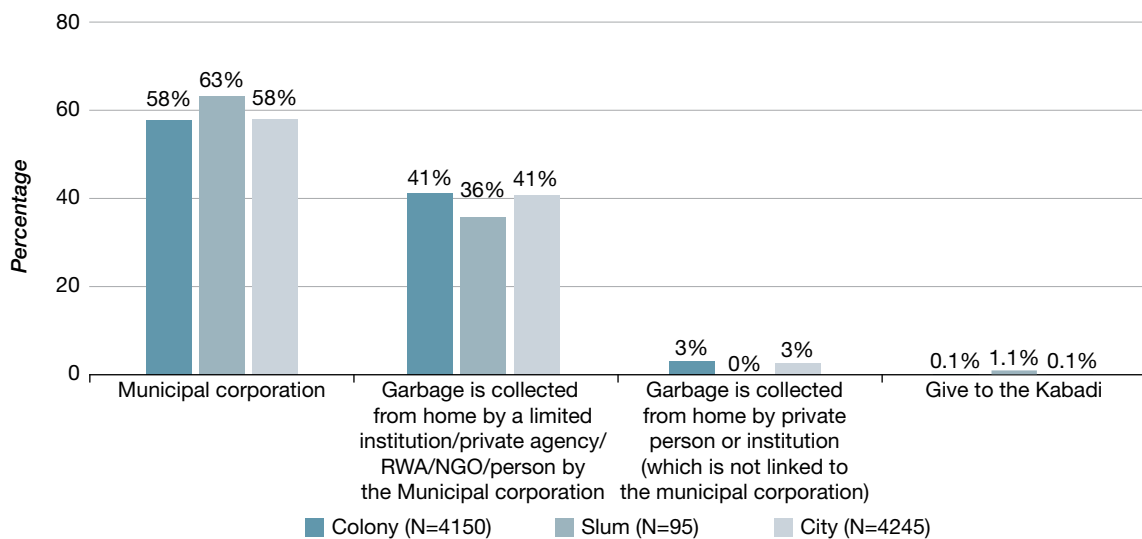


Chart 11: Frequency of Door to Door Waste Collection Service (N=4,245)

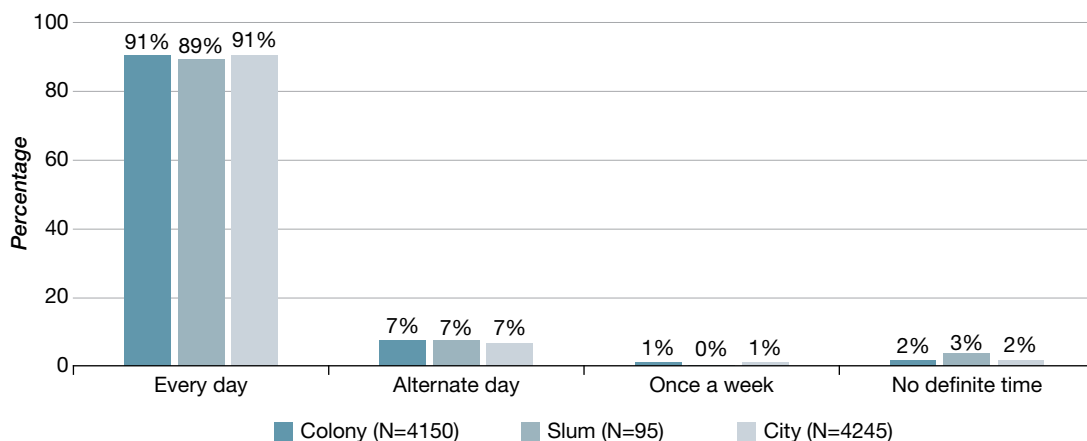
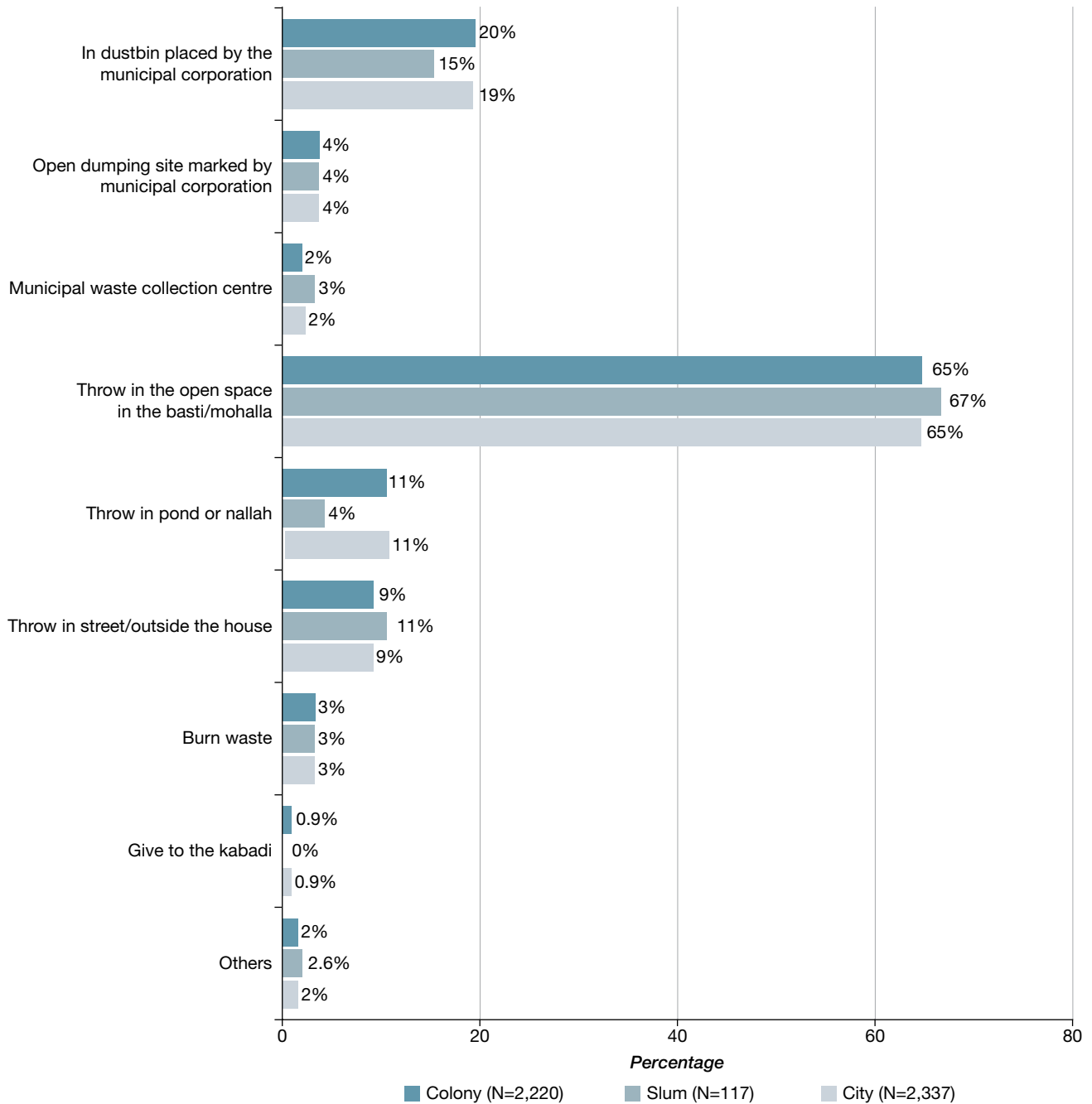


Chart 12: Disposal of Waste, if Households Collection is Unavailable (N=2,337)



Payments for waste collection

When asked if they paid for waste disposal, 54 per cent (3,563) households said they did not. For the city as a whole, 30 per cent (64) households in slums and 46 per cent (2,952) in colonies reported paying for cleaning services. Many of these households are being served by Muskaan Jyoti.

Amount paid for waste collection

Of the 3,016 households in the city as a whole paying for waste collection, all slum households (64) and 99 per cent (2,918) households in colonies paid up to Rs.50 per month. About 1 per cent of city households paid a higher amount between Rs. 51 and Rs.100. In colonies, 1 per cent (15) paid upwards of Rs.100 as well.

Chart 13: Distance of Dustbin/Waste Collection/Dumping Site from Households (N=577)

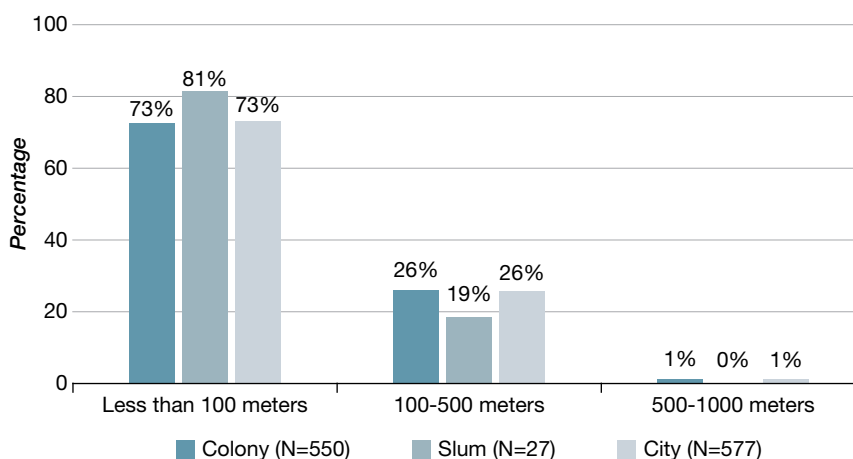


Table 2: Amount Paid Per Month for Waste Collection Services (N=3,016)

Amount	Colony (N=2,952)		Slum (N=64)		City (N=3,016)	
	Ab	%	Ab	%	Ab	%
Up to Rs. 50	2,918	99	64	100	2,982	99
Rs. 51 to Rs.100	19	1	0	0	19	1
> Rs. 100	15	1	0	0	15	0

Ab = Absolute number.

Road sweeping services

A majority of households reported that streets were being swept. In colonies, 66 per cent (4,195) households, and in slums, 59 per cent (125) said street sweeping services were provided. In 61 per cent cases, this facility was provided every day, while in 15 per cent of cases, it was done every alternate day. However, 13 per cent of the

city respondents said that the service was erratic, with no fixed timing.

Amongst the 4,320 households across the city who said street sweeping was being done, 96 per cent said that the municipal corporation provided the service, while 2 per cent said this was done by private agencies and NGOs which had tied up with the municipality.

Wards Without the Service of Road Sweeping

23, 10, 4, 42, 45, 26, 29, 15, 39, 34, 53, 37, 41, 31, 2, 1, 8, 44, 24, 43

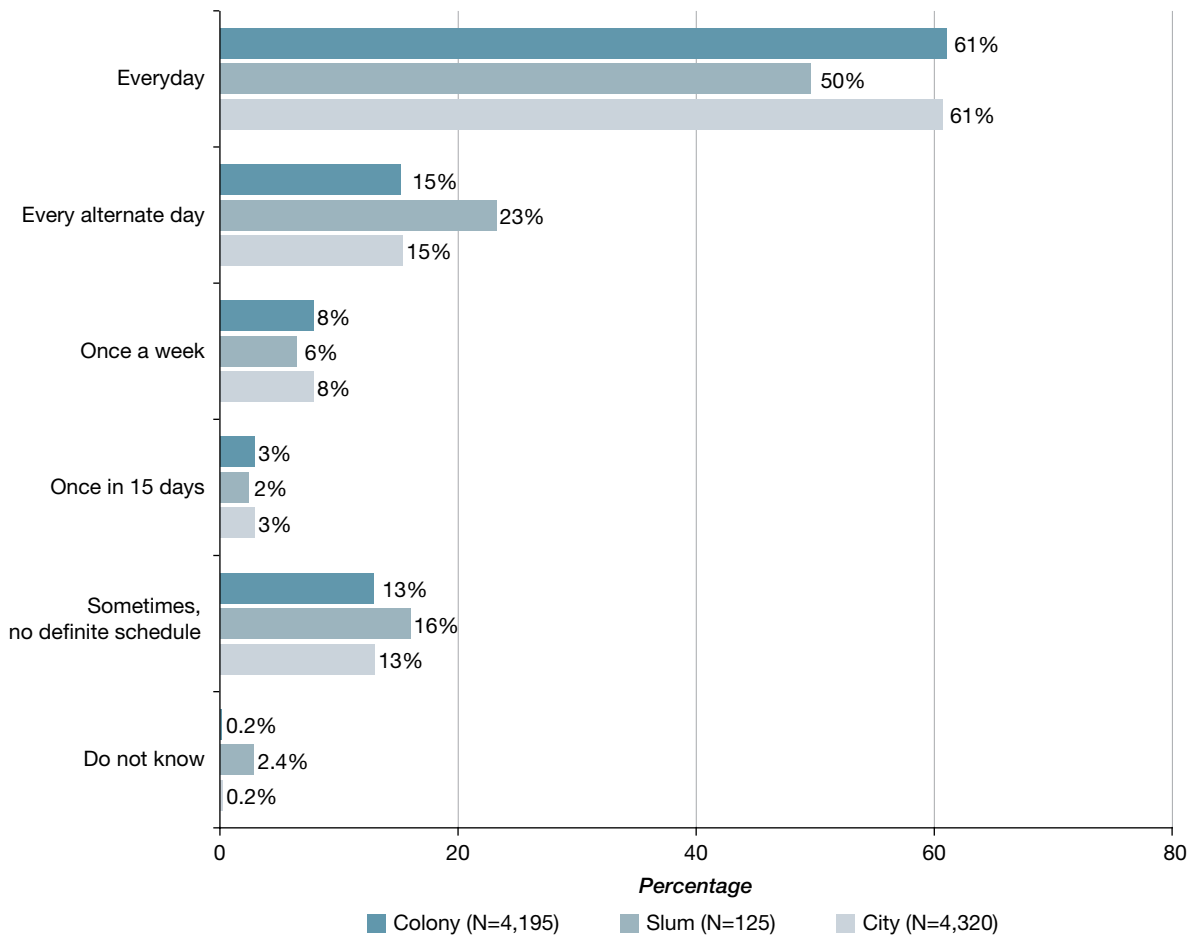
Type of Complaints

No street sweeping facility

Ward Number

23, 26

Chart 14: Frequency of Sweeping (N=4,320)



Payments for road sweeping

A significantly large number, 94 per cent (3,932) households said they did not make payments for road and street sweeping. In slums, only 8 per cent (10) households said they paid for this service, while in colonies, this figure falls to 6 per cent (251). For the majority, this payment made was within Rs. 50, while for some payments ranged from Rs. 50 to Rs. 100. In a few cases, payments exceeding Rs. 100 were also made.

Complaints about waste collection, street and road sweeping

A majority of the 6,582 households that were surveyed, had never lodged any complaint about waste collection and street sweeping to the appropriate authority. Only 7 per cent (15) of slum households and 5 per cent (295) of colony households had complained at least once. It must be noted that the low number of complaints does not indicate better quality of services, but lack

Reduced Frequency of Road Sweeping	Ward No.
Once a week or less	1, 2, 7, 16, 17,22, 23, 25,28, 30, 32, 33, 34, 37, 49, 50

of knowledge of existing systems of complaint registration. As a result, most people either do not complain or turn to the use of informal channels. A total of 310 complaints of different types were made as per the Table 3 here.

Mode of complaint about waste disposal

The most common mode of lodging a complaint was to visit the ward councillor individually or in a group. Of the total responses received, 81 per cent (240) in colonies and 73 per cent (11)

in slums complained to local ward councillors individually, while 20 per cent households in slums (3) and 14 per cent households in colonies (40) complained to ward councillor in a group. Many slums now have Settlement Improvement Committees (SICs) formed through PRIA's intervention. The members of SICs are in contact with their councillors, which also contributed to higher numbers of lodging complaints in the findings. Through these committees, the households in slums come together to discuss and take up issues with councillors in a group.

Table 3: Type of Complaints Made About Waste Collection, Street and Road Sweeping (N=310)

Type of complaints	Colony (N=295)		Slum (N=15)		City (N=310)	
	Ab	%	Ab	%	Ab	%
No waste collection	44	15	4	27	48	15
No street sweeping facility	285	97	15	100	300	97
No dustbins nearby	89	30	6	40	95	31
Others	23	8	0	0	23	7

Table 4: Mode of Complaints Made About Waste Collection, Street and Road Sweeping (N=310)

Mode of complaints	Colony (N=295)		Slum (N=15)		City (N=310)	
	Ab	%	Ab	%	Ab	%
Personal visit to municipal office	24	8	0	0	24	8
Group visit to municipal office	20	7	3	20	23	7
Visiting the local councillor individually	240	81	11	73	251	81
Collectively going to the local councillor	40	14	3	20	43	14
Personal visit at the helpdesk	1	0	0	0	1	0
Group visit at the helpdesk	0	0	0	0	0	0
Individually through city/faculty engineer/plumber/sanitary inspector/ward jamadar	2	1	0	0	2	1
Going collectively through the city/faculty engineer/plumber/sanitary inspector/ward jamadar	2	1	0	0	2	1
Called helpline/telephone	0	0	0	0	0	0
Through SMS	0	0	0	0	0	0
Through website	0	0	0	0	0	0
During public hearing	0	0	0	0	0	0
Others	3	1	0	0	3	1

Resolution of complaints about waste disposal

Out of the total households that complained about waste collection and disposal, 99 per cent (291) households in colonies and 93 per cent (14) households in slums reported that their complaints were not resolved. Inability to attend to the complaints of the residents also leads to

reduced interest in filing complaints, resulting in fewer number of complaints. Even among the 2 per cent respondents who said complaints had been attended to, a follow up question regarding days taken for resolution yielded disappointing results. Eighty per cent respondents said it took nine days for complaints to be resolved, while 20 per cent said it took over 30 days.



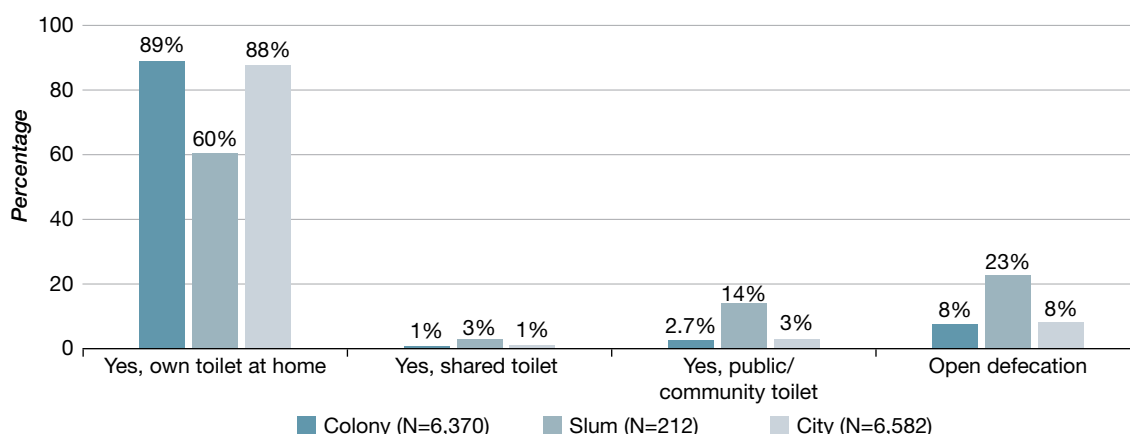
Toilet Facilities

Access to a secure toilet facility is a basic right that goes a long way in ensuring hygiene, as well as safety. While 88 per cent (5,771) of households across Jhansi have a toilet at home, the figure is lower for slums (60 per cent or 128 households) in comparison to colonies (89 per cent or 5,643 households).

Approximately 1 per cent (62) of colony households and 3 per cent (6) slum households utilise shared toilets with family members who live close by. The remaining 205 households utilise community toilets⁷. In 23 per cent (48) of slum households and in 8 per cent (490) of colony households, members defecate in the open,

Dominant Wards Practicing OD	10, 23, 26, 4, 2, 1, 15, 39, 21, 29, 27, 13, 18
Available Space for Construction	10, 23, 26, 46, 4, 2, 1, 15, 8

Chart 15: Toilet Facility Available to Household (N=6,582)



exposing themselves to disease as well as safety risks. News reports show how adolescent girls and women are vulnerable to molestation and rape when defecating in the open. PRIA has been working closely with SICs that help advocate the interests of the community, and pitch for toilets for residents.

Type of toilets

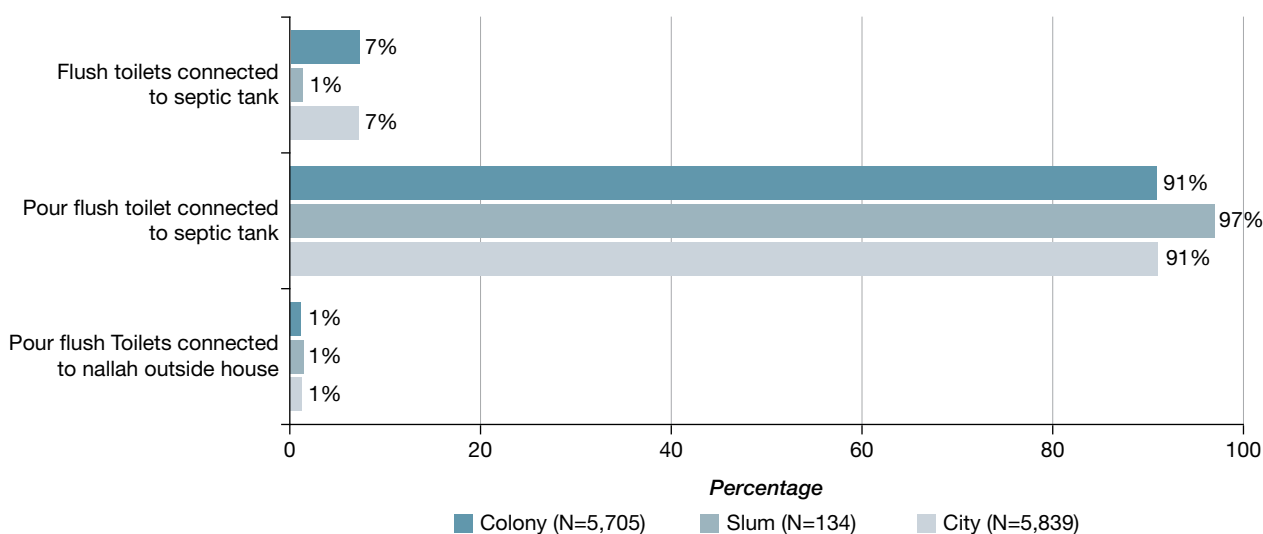
Respondents from households who reported the use of individual or shared toilet facilities were asked about the types of toilet they utilised at home, as well as the outlets these toilets were connected to. Across the city, a majority of households use flush/pour flush toilets connected to septic tanks. This is because sewerage connections do not exist in the city.

As Chart 16 shows, 91 per cent of colony and 97 per cent of slum households utilise septic tanks. However, there is a difference, in that colony residents use automated flush systems, while slum residents resort to primitive pour flush methods. It is important to note that flush/pour flush toilets which have outlets that lead to open spaces are also equal to open defecation.

Source of funds for individual or shared toilets

Based on a comprehensive situation analysis of access to toilets in Jhansi, certain short, medium and long term goals were set for city sanitation planning. According to a Revised City Sanitation Plan prepared with the support from Administrative Staff College of India (ASCI), Ministry of Urban Development (MoUD) and JMC (ASCI et al, 2014), a target of achieving 100 per cent service delivery and access to individual toilets, community toilets, public toilets and toilets in schools in working condition was to be achieved by 2018 based on JMC's financial capacity. National schemes to ameliorate the city's sanitation situation were to simultaneously contribute to the betterment of the targeted sanitation infrastructure. However, across the city, approximately 96 per cent of toilets have been constructed by households with their own funds. Less than 1 per cent of toilets across the city have been constructed availing Rajiv Awas Yojana or using the Swachh Bharat Mission funding. This reflects a limited effect of one of the biggest mass-scale sanitation drives in the country and is linked to the issue of clearance and disbursement of funds under the SBM. Various

Chart 16: Type of Toilet (For Individual/Shared Toilet) (N=5,839)

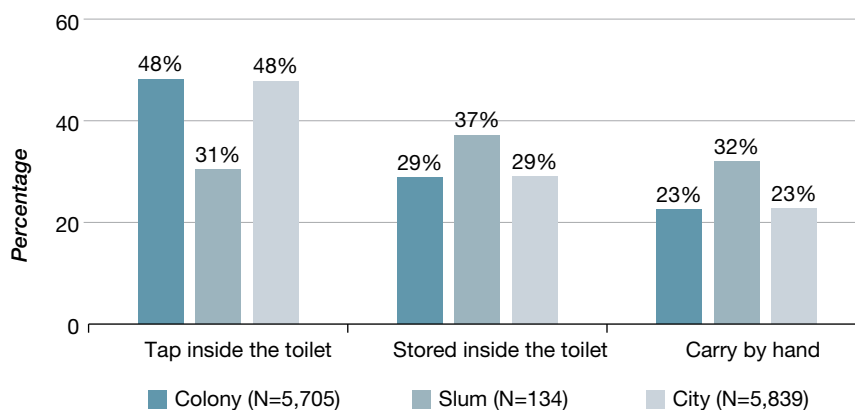


7 Owing to the small sample size, this section has not been analysed.

Table 5: Source of Funds for Individual or Shared Toilet (N=5,839)

Source of funds	Colony (N=5,705)		Slum (N=134)		City (N=5,839)	
	Ab	%	Ab	%	Ab	%
No scheme (used own money)	5,497	96	126	94	5,623	96
Rajiv Awas Yojana (RAY)	21	0.4	3	2.2	24	0.4
Swachh Bharat Mission (SBM)	21	0.4	2	1	23	0
Others	7	0	0	0	7	0
Do Not Know	159	3	3	2	162	3

Chart 17: Source/Inlet of Water for Individual or Shared Toilet (N=5,839)



issues such as delay in sending the second instalment on behalf of the JMC as well as people misusing these funds have prevented extensive spread of SBM's effort and the JMC should look into this urgently.

Inlet of water

As noted earlier, 5,839 households utilise individual or shared toilets. Forty-eight per cent colony households have taps for water supply inside toilets, while 52 per cent make other arrangements that include carrying water or storing it in buckets. In the case of

slums, because of the size of toilets as well as limited access to basic services like water and drainage, only 31 per cent households have taps inside the toilet. The remaining make alternate arrangements similar to what colony residents do.

Knowledge on pit cleaning

Households that had toilets connected to septic tanks or soak pits were asked about the cleaning and maintenance of these types of decentralised systems. Ninety-seven per cent users across the city were aware that these systems required

Wards Where Cleaning is Infrequent/not Practised

34, 16, 22, 42, 58, 44, 49, 37, 7, 59, 19, 5, 41, 48, 25, 24, 60, 29, 56, 50, 45, 17, 11, 2, 38, 36, 30, 28, 6, 57, 52, 15, 32, 53, 31, 43, 55, 14, 51, 13, 21

Chart 18: Last Instance of Pit/Septic Tank Cleaning (N=5,737)

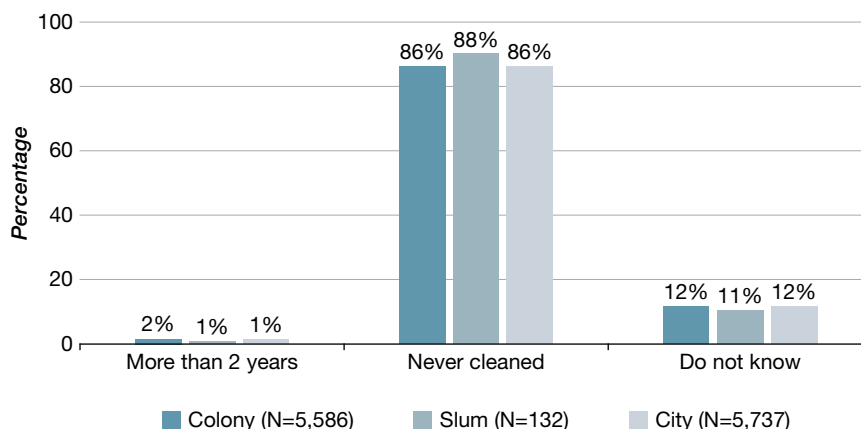
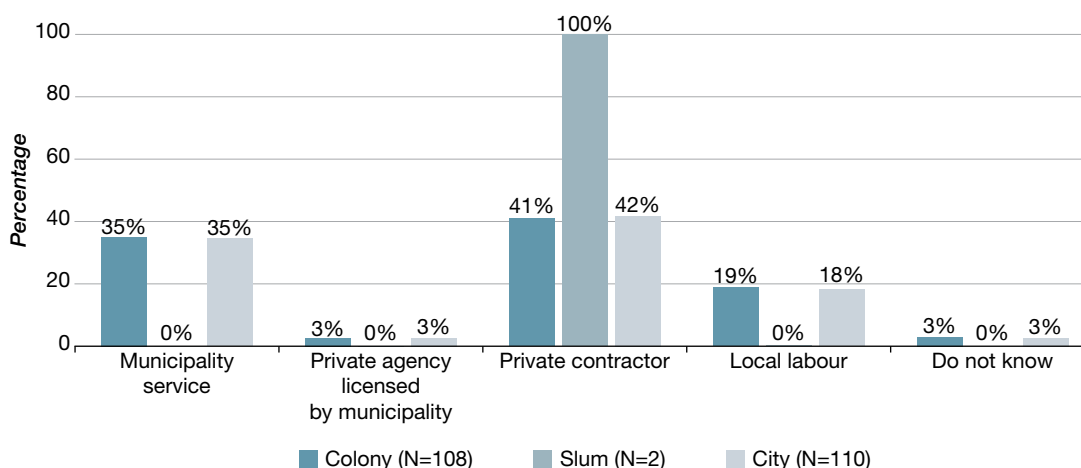


Chart 19: Provider of Service for Pit/Septic Tank Cleaning (N=110)



periodic cleaning, while 3 per cent were not. Awareness levels of residents of slums are lower since 9 per cent (12) were unaware of cleaning requirements compared to 3 per cent (142) households in colonies that reported being unaware.

When these respondents were asked when they had gotten these systems cleaned, 86 per cent (4,816) of colony and 88 per cent (116) slum households said their systems had never been cleaned (Chart 18). When cross-tabulated with age of toilets, it appears that only around one-sixth of these households had toilets that were less than five years old. A substantial number of respondents were also unaware of when this

process had been carried out for their systems, and it is likely that their systems too had never been cleaned.

Only 110 households across the city had got their decentralised systems cleaned at least once. The cleaning services had been provided by the municipality, private contractors and labourers.

Despite a plethora of policy changes, and a push from the SBM, it appears that a crucial part of the cleaning process is still being carried out manually. Only 45 per cent (50) of respondents across the city said that only machines had been used, while others said that cleaning was either carried out manually or through a mix of machine and manual

Table 6: Method of Cleaning (N=110)

Method of cleaning	Colony (N=108)		Slum (N=2)		City (N=110)	
	Ab	%	Ab	%	Ab	%
Completely cleaned with hands	39	36	1	50	40	36
Machine utilisation	49	45	1	50	50	45
Machine is used but to some extent, it is cleaned with hands	20	19	0	0	20	18

processes. Slum households show results that are worse than those in colonies.

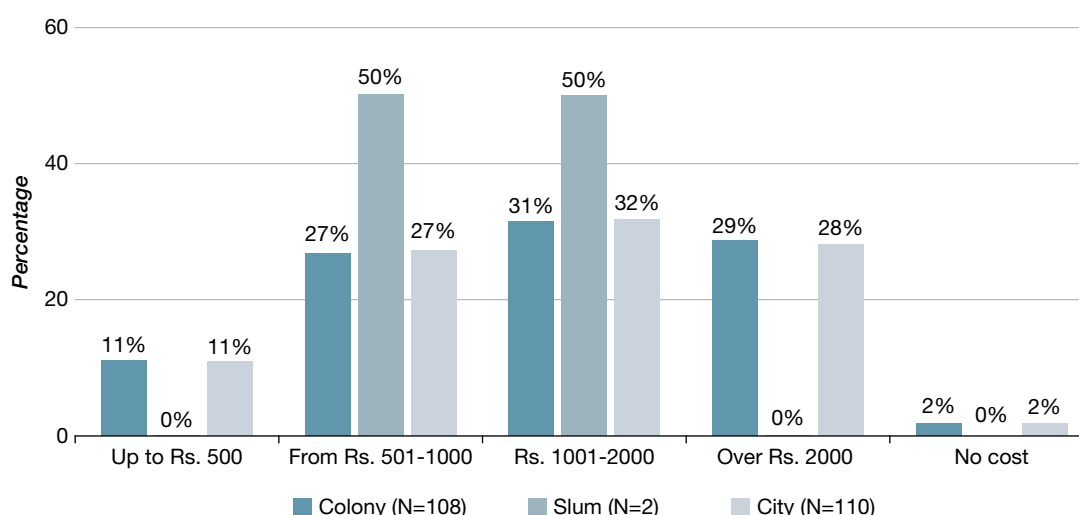
When the method of cleaning is cross-tabulated with the agency in charge, the municipality is responsible for a miniscule number of 16 manual scavenging cases. This, however, is still a serious offence that the municipality must address. In a majority of cases, however, private contractors and local labourers are practicing manual scavenging.

Annual costs for cleaning of pits and tanks is summarised in Chart 20. While some households had not carried out cleaning, they estimated what the process would cost.

Open defecation and desire for toilets

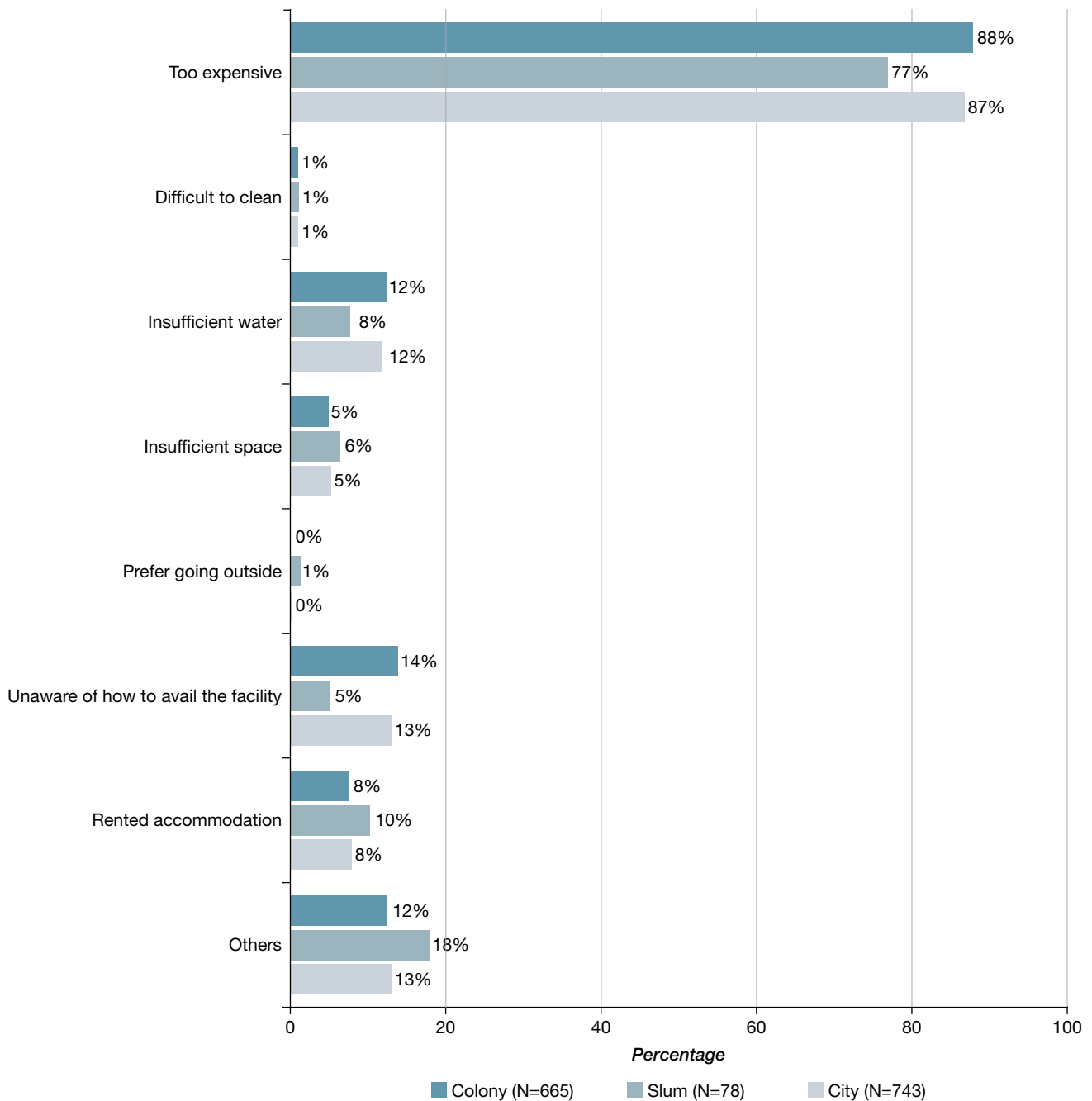
As mentioned earlier, 8 per cent (538) of city households from the sample defecate in the open. This number is 23 per cent (48) in slums and 8 per cent (490) in colonies. These 538 households⁸ were asked why they lacked toilet facilities at home. Across the city, 87 per cent said it was because building a toilet was too expensive, while 13 per cent said they were unaware of how to avail funding through government schemes. Another 12 per cent cited shortage of water as a reason. Other reasons include insufficient space, as well as the fact that they were living in a rented accommodation.

Chart 20: Amount Spent on Cleaning of Pit/Septic Tank (N=110)



⁸ In the graph, the N value is 743 because the question was posed to those defecating in the open as well as to those using public/community toilets.

Chart 21: Reasons for Lack of Toilet Facility in Households (N=743)



Out of 743 households who did not possess toilets, only a few had applied to the municipality for the construction of one. Many others said that applications were mostly rejected, or not followed up on, as a result of which they did not apply. Others were not aware of the procedures for application (Chart 22 and Chart 23). Of the 174 households who had applied, 41 per cent (105) had their applications rejected. Each of these

households said no reason was given for the application being rejected. Even among the 150 households whose applications were accepted, only 25 per cent had received the first installment of money for toilet construction. While 55 per cent did not know the status of their application, 20 per cent said that the municipality was working on their applications.

Chart 22: Application Given to Municipality for Toilet Construction (N=743)

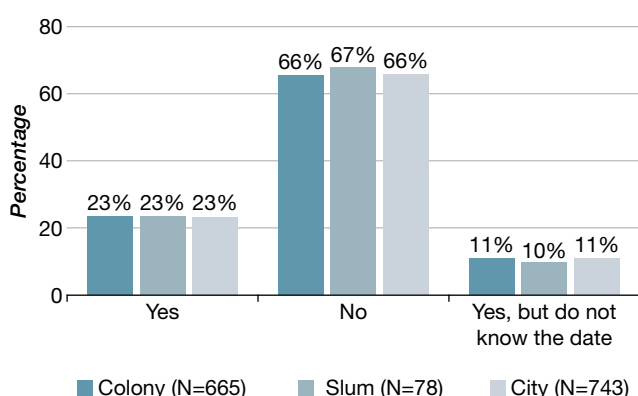
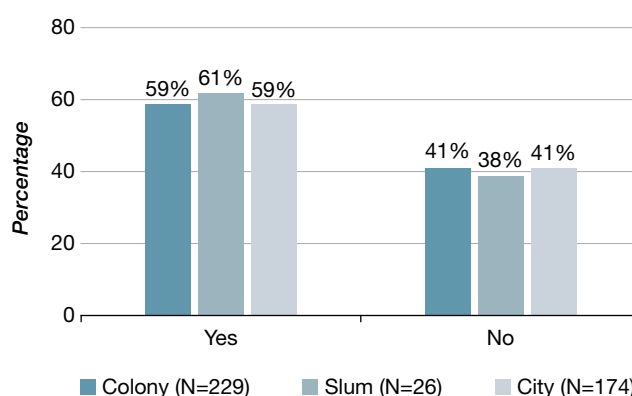


Chart 23: Acceptance of Application by Municipality (N=174)



Water Outlets and Drainage

Jhansi city largely has an open drainage system. In most areas, drains are connected to a *nallah*. Some of the *nallahs* which play important roles in the drainage pattern of the city are Dadiyapura *nallah*, Natbali *nallah*, Kasai Baba *nallah* and Gondu Compound *nallah*.

As witnessed in most Indian cities, drainage is often clogged with solid waste, which blocks the flow of wastewater. During monsoons, the problem is exacerbated which creates multiple complications, for public health and traffic.

Out of 6,582 households surveyed in the city, 99 per cent (6,543) had water outlets (a section

that takes water outside the house) in their homes. The percentage was the same for colonies (6,335) and 98 per cent (208) for slums.

Majority of the water outlets were *pucca* in nature: 97 per cent (6,141) in colonies and 81 per cent (169) in slums. The water outlets in 3 per cent (194) households in colonies and 19 per cent (39) in slums were *kutchha*, often leading to spillage of waste water. These *kutchha* outlets are also prone to breakage when subject to higher load.

Ninety-eight per cent of colony households said that wastewater from the kitchen and bathroom flowed into *nallah* that were connected to main

Chart 24: Water Outlet in Households (N=6,582)

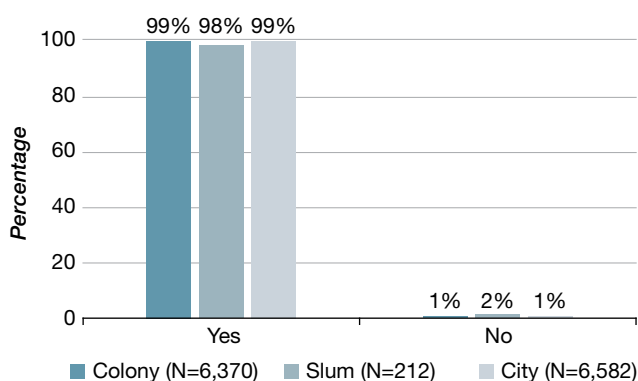


Chart 25: Type of Water Outlet (N=6,543)

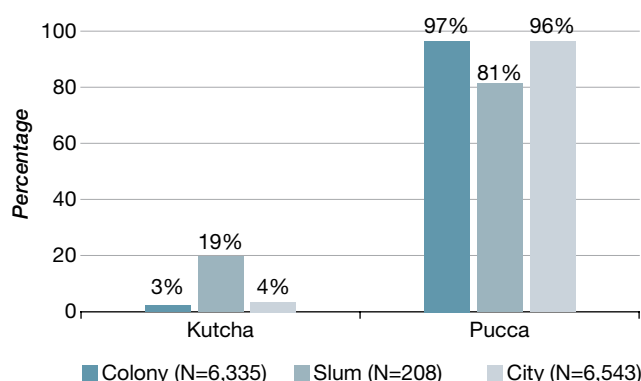


Chart 26: Outlet for Waste Water from Kitchen (N=6,582)

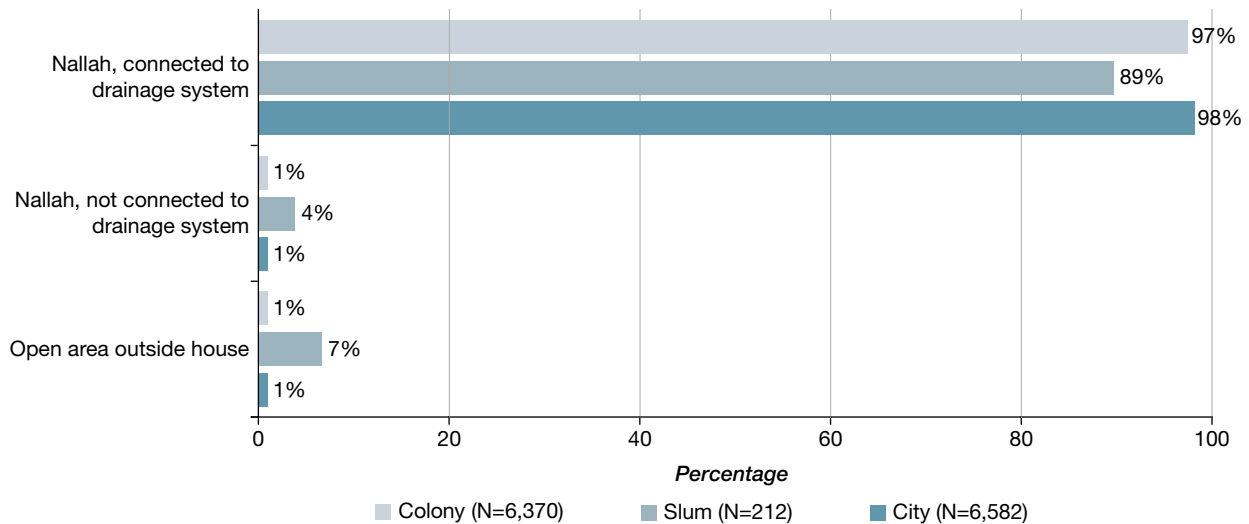
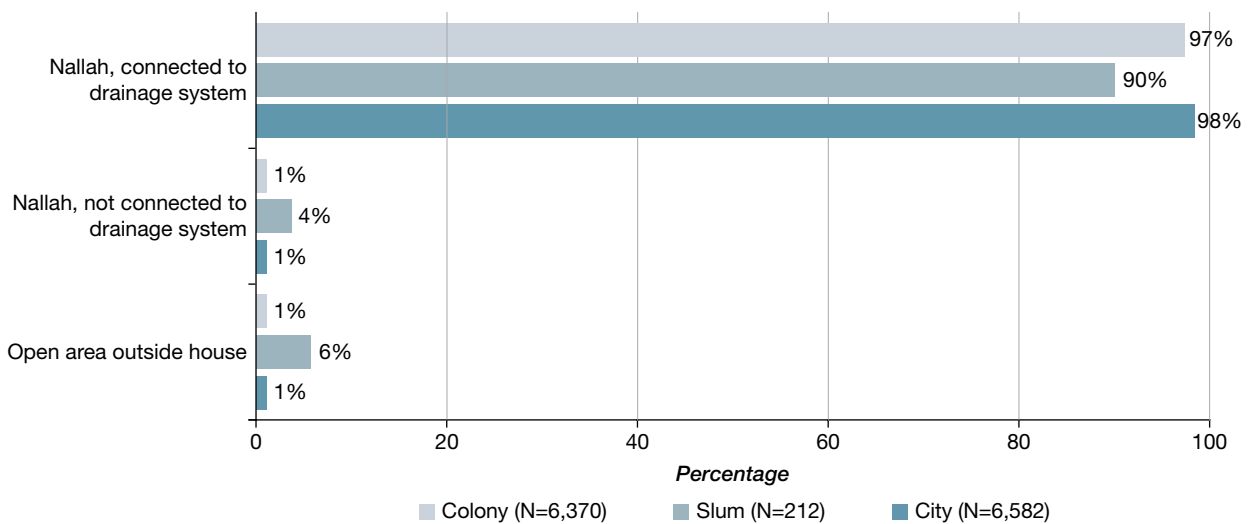


Chart 27: Outlet for Waste Water from Bathroom (N=6,582)



drainage facilities. In the case of slum households, 89 per cent said the same regarding wastewater from the kitchen and 90 per cent said the same regarding wastewater from bathroom.

Respondents were also asked about other outlets and their connection points for wastewater. A majority of responses indicated that the water flowed into a *nallah* connected to the drainage system. However, 1 per cent respondents from colonies as well as slums said that wastewater accumulated in the open spaces outside the house. This raises serious health concerns, since stagnant water can cause many forms of infection and give rise to mosquito borne diseases.

Construction, maintenance and payments

Households which had toilets connected to nallahs were asked about construction, maintenance and payments. Ninety-eight per cent households in colonies (6,172) and 91 per cent households in slums (183) reported that the construction was done by the municipality. The municipality also looked after maintenance, according to 88 per cent (5,520) respondents in colonies and 84 per cent (169) in slums. A significant number of households said that they had to carry out cleaning themselves. This too is more common in slums than colonies.

Chart 28: Who Constructed Water Outlets (N=6,496)

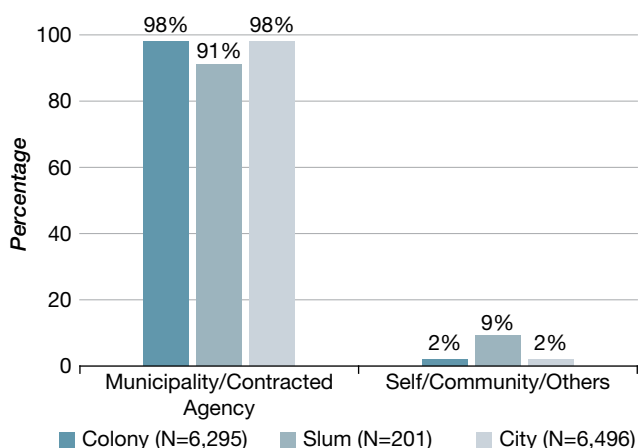


Chart 29: Who Maintains Water Outlets (N=6,496)

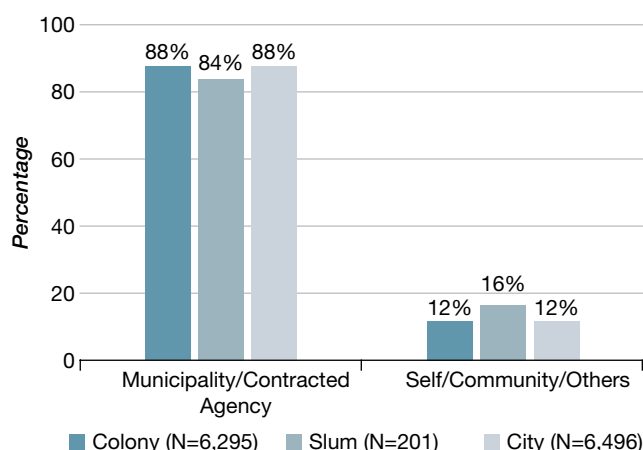


Table 7: Type of Complaints Raised About Water Outlets and Drainage Systems (N=274)

Type of complaints	Colony (N=269)		Slum (N=5)		City (N=274)	
	Ab	%	Ab	%	Ab	%
Water logging	80	30	3	60	83	30
Poor quality of flow	8	3	0	0	8	3
Poor construction of the drainage	35	13	3	60	38	14
Erratic cleaning	234	87	5	100	239	87
All the waste is dumped in the drainage	35	13	0	0	35	13
Different kind of connections are made in the drainage	1	0	0	0	1	0
Others	8	3	0	0	8	3

Out of 5,689 households (a subset of those whose maintenance is carried out either by the municipality or the households themselves) across the city, only 274 had lodged complaints about services. The complaints were largely about water logging caused by dumping of waste, poor construction of drainage, quality concerns and erratic cleaning.

Complaints can be lodged through both formal and informal channels, and the responsiveness of agencies is often dependent on this. Formal complaints are as those where the complainant is provided with a receipt or some form of acknowledgement. This is made possible through (collectively or individually) visiting

the municipality/help desk/local councillor, utilising the website or helpline, or utilising SMS services. While councillors too can lodge complaints, it is highly dependent on the individual's desire and motivation to address issues.

Of the 274 households that had lodged complaints, 84 per cent had done so through visiting the local councillor individually and 6 per cent by visiting the councillor collectively, though this trend was more common in colonies than slums. Only 4 per cent visited the municipal office to complain, while 3 per cent complained to the city/faculty engineer/plumber/sanitary inspector/ward jamadar.

Table 8: Number of Days Taken to Attend to Complaints About Water Outlets and Drainage (N=274)

Whether complaint about water outlet and drainage system was attended to	Colony (N=269)		Slum (N=5)		City (N=274)	
	Ab	%	Ab	%	Ab	%
Yes, in 1 day	1	0	0	0	1	0
Yes, in 2-3 days	6	2	0	0	6	2
Yes, in 4-7 days	2	1	0	0	2	1
Yes, after 1 week	5	2	0	0	5	2
Not paid attention	255	95	5	100	260	95

Wards Where Complaints are Rampant

Type of Complaint	Ward No.
Water logging	26, 23, 44
Erratic cleaning	26, 23, 42, 34, 1

A mere 3 per cent (5) of slum households and 5 per cent (269) of colony households had complained at least once. These numbers may seem low, but most respondents said that they felt the situation would never improve, and so did not complain to service providers. Ninety-five per cent (260) of the 274 households that had lodged complaints said that their complaints had never been attended to. Table 8 highlights the number of days it took to attend to these complaints.

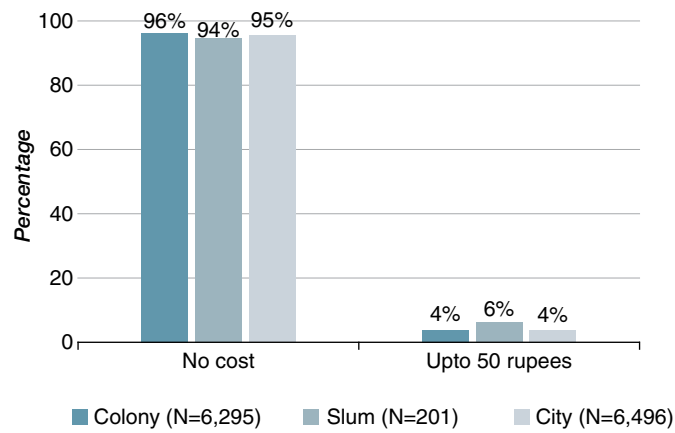
A total of 412 complaints had been made by the 274 households and only fourteen households said their complaints had been attended to. Of these, thirteen reported that their complaints

had been resolved. Three households had their complaints resolved in two days, six had their complaints resolved between three and five while four households had their complaints resolved between seven and ten days.

Lack of maintenance is related to payments. Municipalities usually lack funds, which affects the quality of service provided. Ninety-five per cent (6,202) of city households said that they did not pay for maintenance of water outlets and drainage systems. Those who did, said they paid up to Rs. 50 per month. The municipality can levy appropriate service charges, revenue from which can be used for operations and maintenance of services.

Aspects Pertaining to Drainage	Wards Which Require Immediate Attention
Kitchen and bathroom not connected to proper outlets	23, 10, 15, 9, 2
High instances of water logging	26, 23, 44
High instances of erratic cleaning	26, 23, 42, 34, 1

Chart 30: Cost Incurred by Households on Maintenance of Water Outlets and Drainage Systems (N=6,496)




Water Supply

A critical aspect of sanitation and improved health is access to clean water, especially for drinking purposes. In Jhansi, piped water is supplied by Jal Sansthan, a department under the Nagar Vikas Mantralay (Ministry of Urban Development) of the Uttar Pradesh government.

In colonies, 52 per cent (3,344) households said that their primary source of drinking water was the household piped connection provide by Jal Sansthan. In slums, too, 45 per cent (96) households cited the Jal Sansthan provided piped water as their primary source of drinking

Chart 31: Primary Source for Drinking Water (N=6,582)

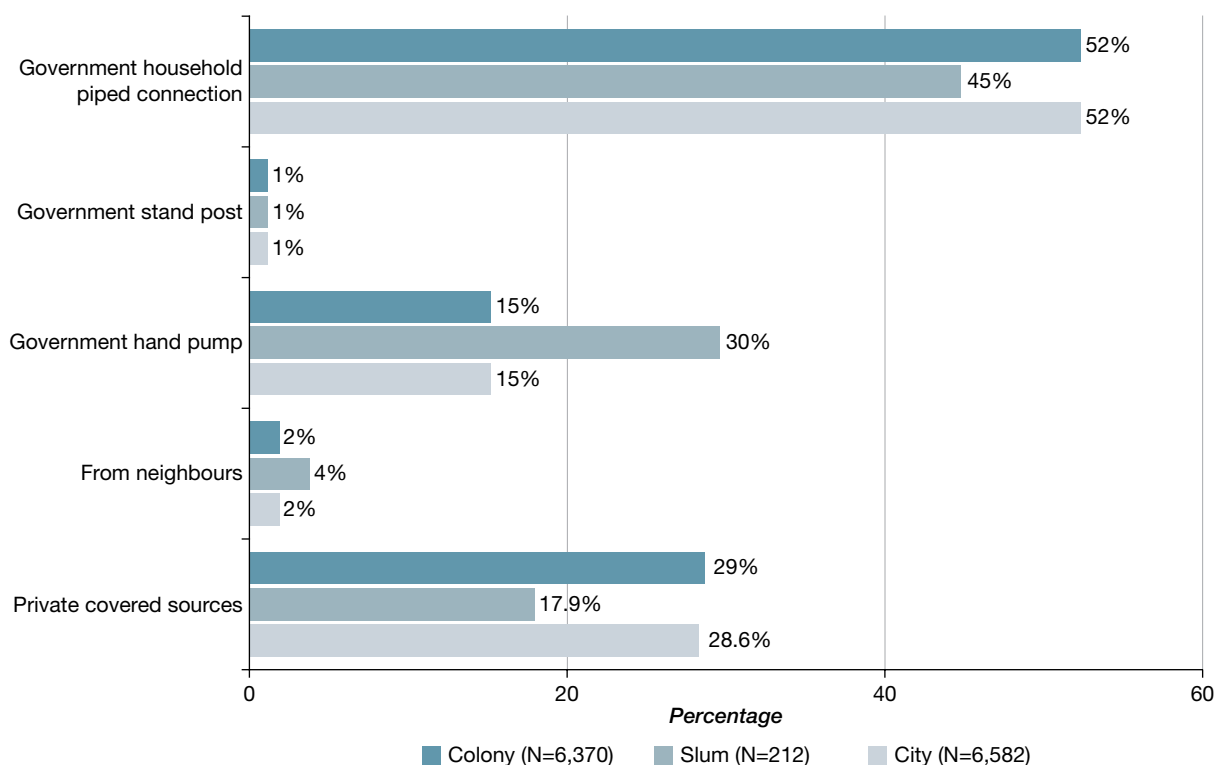
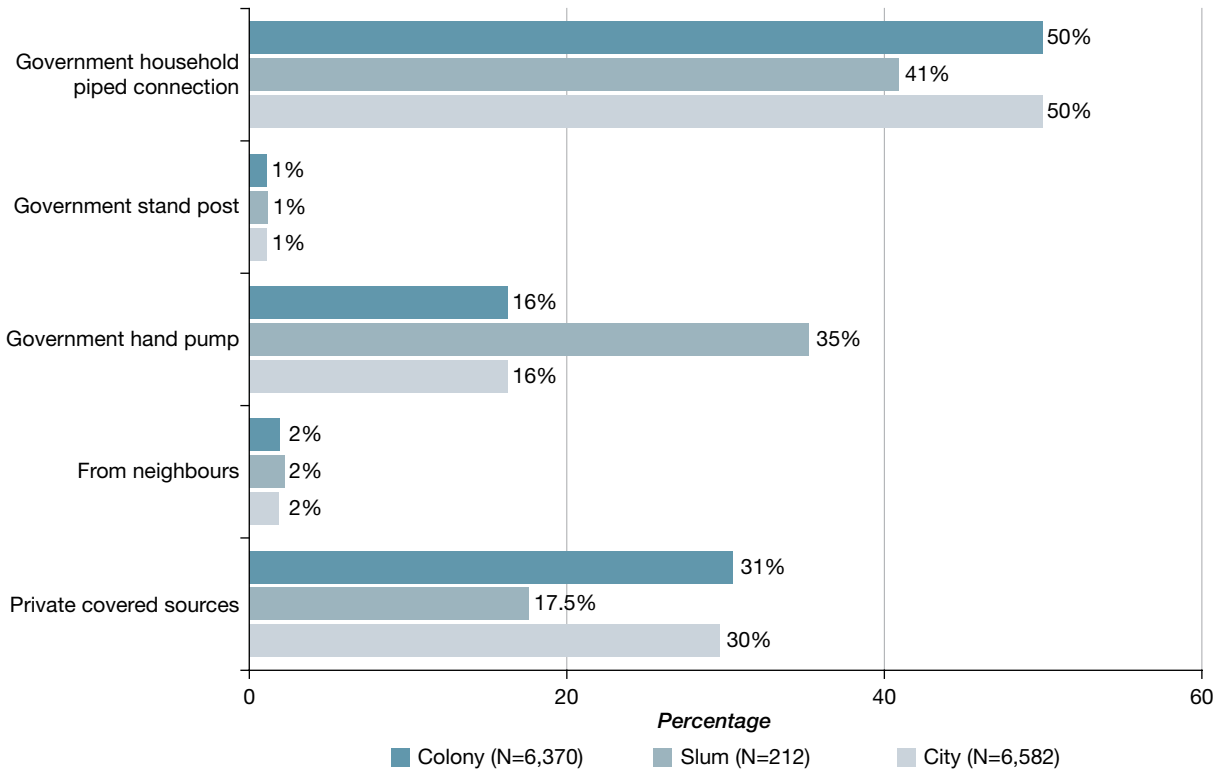


Chart 32: Primary Sources of Water for Other Purposes (N=6,582)



water. One per cent (3) slum households relied on government stand posts and 30 per cent (63) relied on government hand pumps. Even in colonies, 15 per cent (940) households relied on hand pumps. The survey revealed that 29 per cent (1,884) of the city respondents (22 per cent slum households and 30 per cent households in colonies) relied on private sources of water like bore/tube wells, hand pumps, society channelled water, etc.

When asked about primary sources of water for other purposes, the share of household piped connections was 50 per cent for the city as a whole (3,289), as well as for colonies (3,203) and 41 per cent (86) for slums. Usage of hand pumps stood at 16 per cent (1,073) and the use of private sources of water at 30 per cent (1,982) for the city

as a whole. Ten per cent (661) of city households also said they had additional sources of water.

In Jhansi, water is available on all seven days for 98 per cent (3,524) of the city households (this figure dips to 92 per cent in slums) for those who avail government services. Forty per cent (1,461) households across the city receive water for one to two hours, another 38 per cent (1,360) receives water for between thirty minutes and one hour and 11 per cent receive water for only fifteen and thirty minutes a day.

Keeping these factors in mind, 86 per cent (5,630) respondents said that they were satisfied with the availability of water. However, when responses of slum households are analysed separately, satisfaction levels dip to 84 per cent.

Duration of Access to Water	Ward No.
Less than 30 minutes	20, 35, 11, 58, 9, 54

Chart 33: Number of Days of Water Supply Received in a Week (N=3,608)

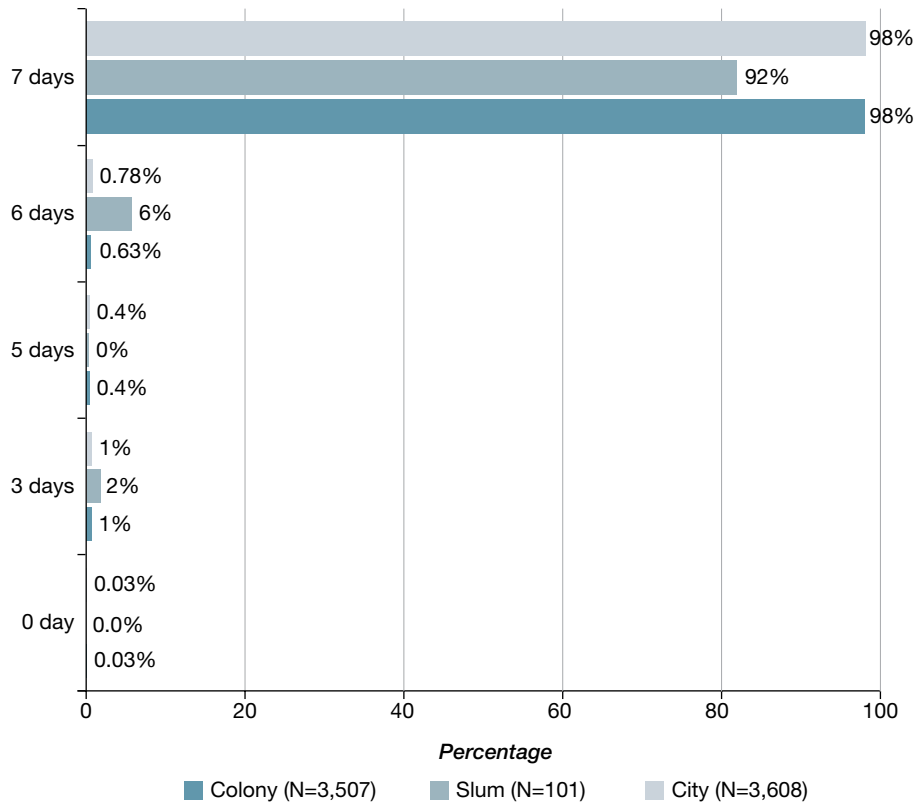


Chart 34: Duration for Which Water is Made Available in a Day (N=3,608)

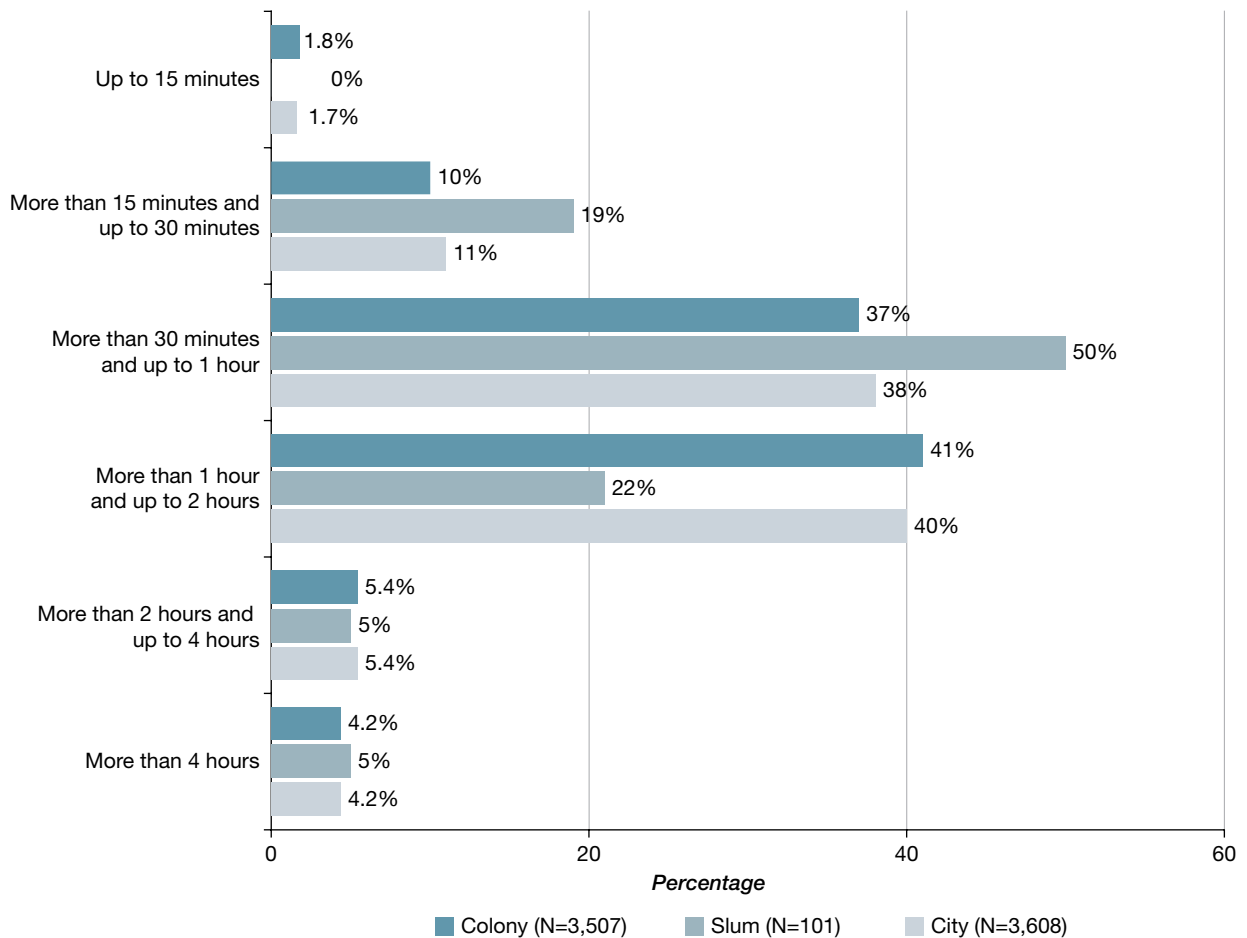
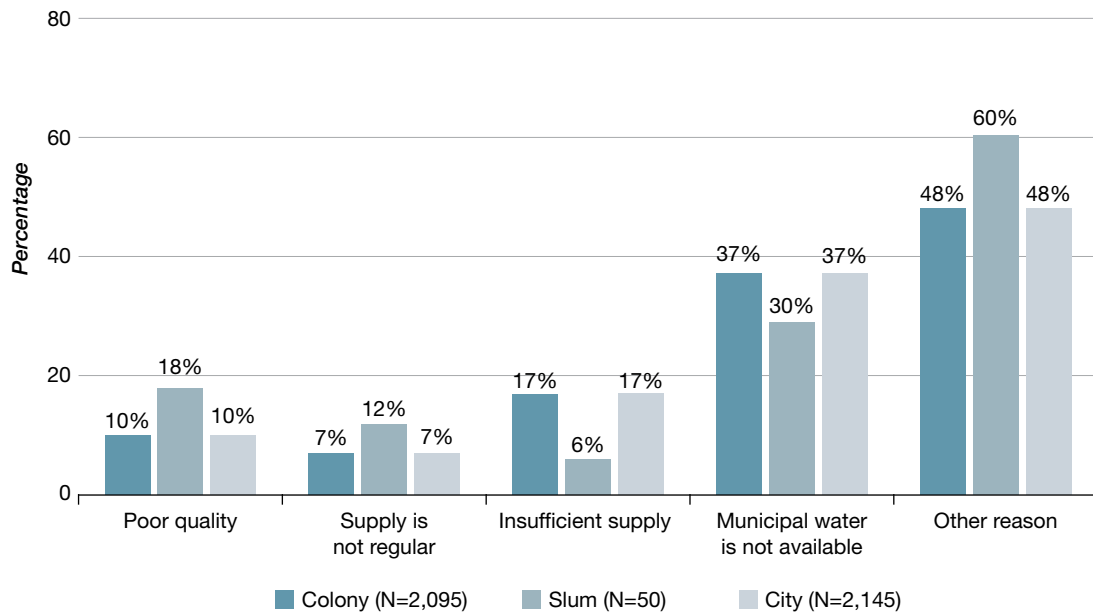


Chart 35: Reasons for not Using Water Provided by Government Sources/Jal Sansthan (N=2,145)



Reasons for Not Utilising Government Water Source

WARD NO.

Municipal water is not available

15, 26, 10

Insufficient supply

32

The municipality should strive to ensure water is available on a daily basis for longer periods. In slums especially, storage is difficult and water is easily prone to contamination.

Respondents who utilised only private sources of water (private tankers, bottled water, private wells/ bore wells, submersibles) or water from lakes, ponds/open wells were asked why they did not avail of government water services. Most said that government water supply was not available in their

areas. Many also said that supply of water was very limited. Others stated that quality was not up to the mark. The municipality can seek information regarding wards where this problem occurs and provide solutions.

The sample of 6,582 households also ranked the top three activities (out of a list of ten) for which they consumed water. The maximum use was for washing clothes, followed by toilet usage and dinking purposes (Table 9).

Wards Without Sufficient Water

33, 53, 19, 23, 32

Table 9: Usage of Water for Various Households Activities (N=6,582)

Usage of water	Colony (N=6,370)		Slum (N=212)		City (N=6,582)	
	Ab	%	Ab	%	Ab	%
For drinking purposes	3282	52	104	49	3,386	51
For washing clothes	5144	81	170	80	5,314	81
For utensil washing	2092	33	438	39	2,174	33
For toilet usage	4904	77	82	62	5,035	76
For bathing purposes	2262	36	131	51	2,370	36
For cooking purposes	616	10	108	13	643	10
For cleaning of household	800	13	27	7	814	12
For gardening	1	0	14	0	1	0
For animals	8	0	0	0	8	0
For washing car	1	0	0	0	1	0



Bathing Facilities

Type of bathing facility

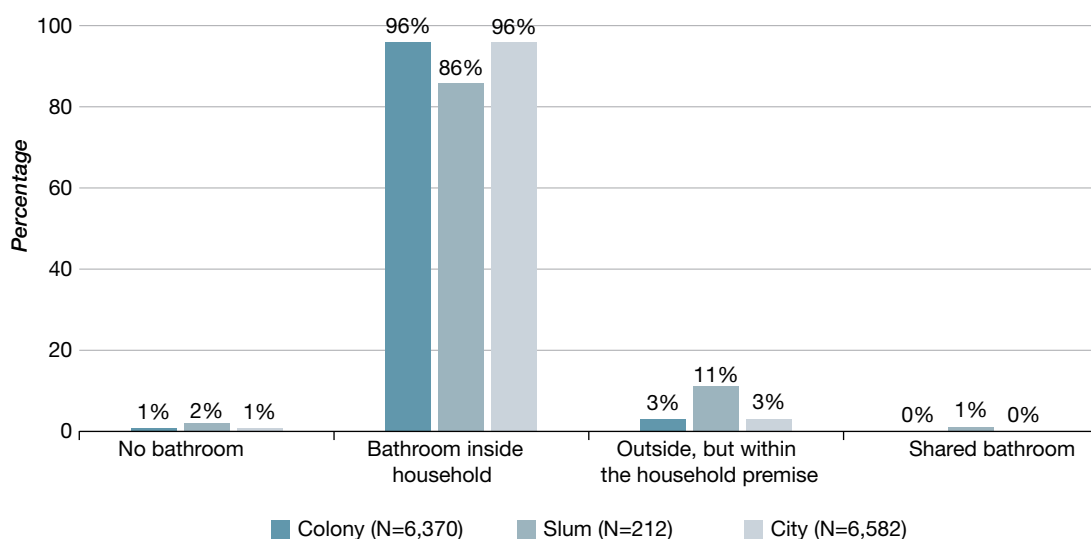
Out of the sample of 6,582, 1 per cent of colony households (50) and 2 per cent slum households (5) reported absence of a bathing facility inside their homes. These respondents would bathe using hand pumps and stand posts, although some utilised ponds and well water too. Ninety-six per cent (6,128) colony households had a bathroom within their house, while 3 per cent (189) had a bathroom outside the house, but within the premises. In slums, despite the smaller sizes of

houses, 86 per cent (182) had bathing facilities within the home, while 11 per cent (23) had bathrooms located within their premises, though some of these could be makeshift arrangements. In addition, a few houses also shared bathing spaces with their relatives and neighbours, while two houses utilised community-bathing facilities.⁹

Structure of the facility

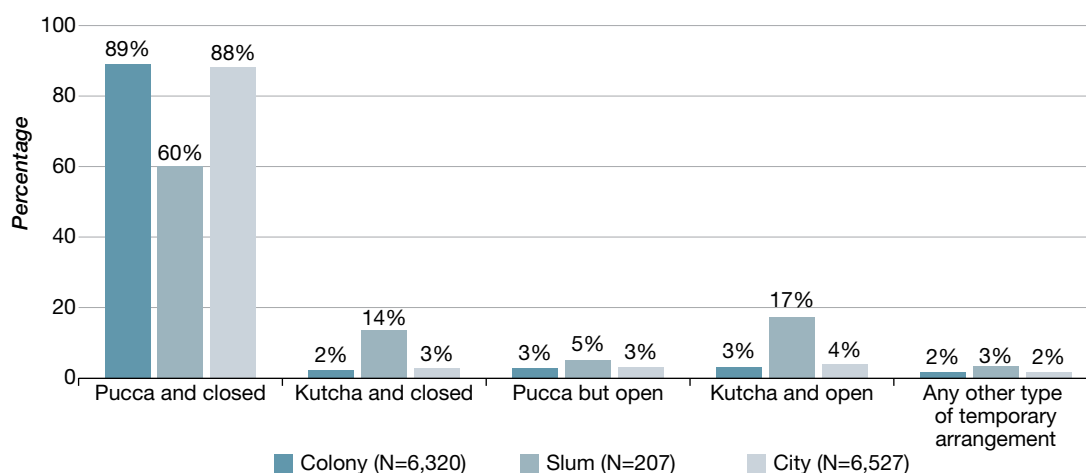
Ninety-two per cent (5,965) households in colonies and 65 per cent (136) in slums had bathing

Chart 36: Type of Bathing Facility Available (N=6,582)



⁹ Considering the small sample, these have not been analysed separately.

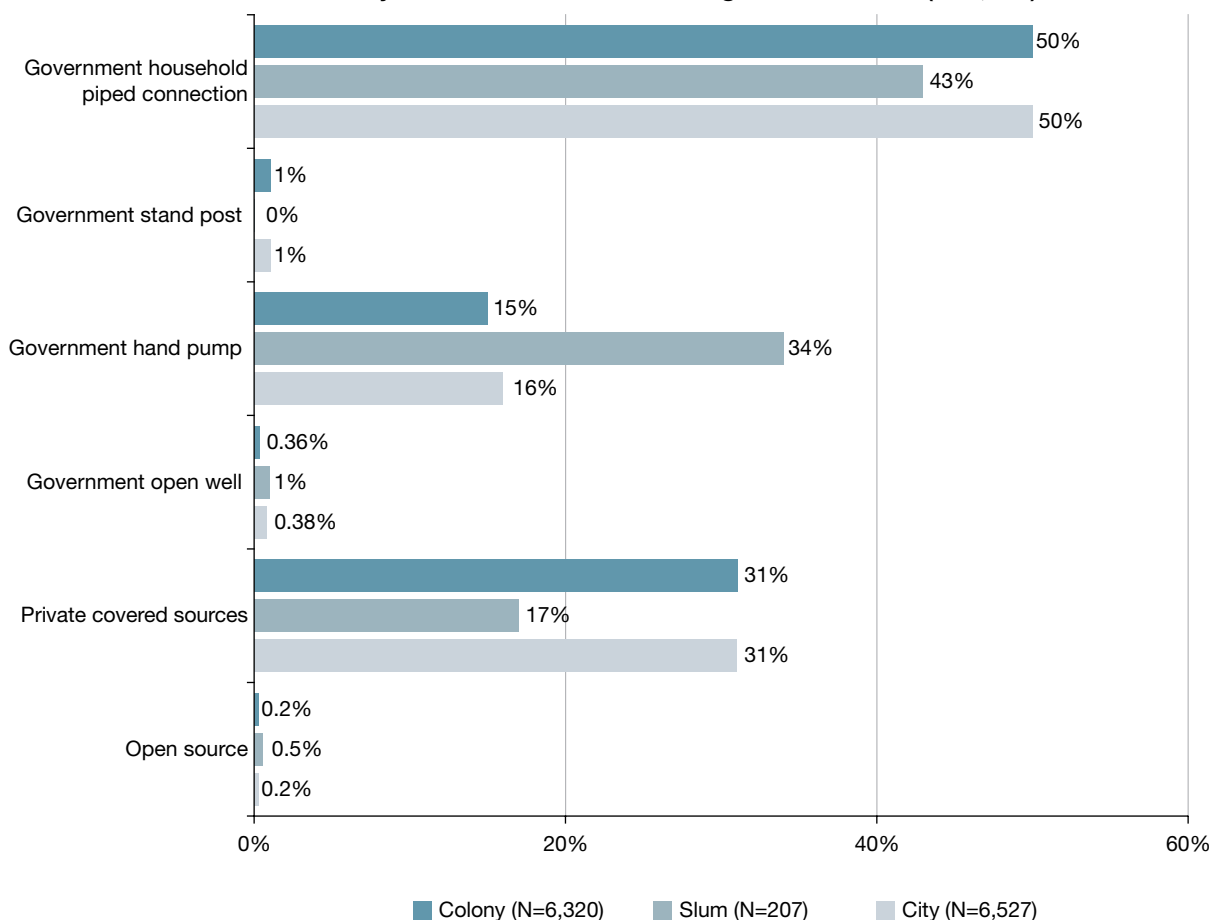
Chart 37: Structure of Bathing Facility in Households (N=6,527)



structures that were permanent and secure (with doors). Thirty-one per cent (440) slum households reported that their structures were made of mud, thatch or other low quality materials, as well as various types of temporary arrangements. The predominance of bathing facilities in slums which are situated outside the house, and are of *kutcha* nature, can pose a security risk for women.

Most households in both colonies and slums utilised piped water connection for bathing – 50 per cent (3,180) in colonies and 43 per cent (89) in slums. Other main sources for water for bathing purposes, especially in slums, are open wells and streams as well as stand posts and hand pumps.

Chart 38: Primary Source of Water for Bathing in Households (N=6,527)





Section 4

RECOMMENDATIONS AND CONCLUSION

Recommendations



Toilets

Over the past year, the JMC has launched Open Defecation Free (ODF) drives. However, the survey results show the practice continues and this indicates that the effects of such drives are still limited. People often return to open defecation out of habit or due to lack of resources to construct a toilet. In many areas, inadequate water availability forced people to defecate in the open despite the presence of toilets. Similar to the involvement of private agencies for waste collection and segregation, the JMC could also rope in NGOs and other Civil Society Organisations (CSOs) who work with communities and move towards a more accurate measuring of open defecation and latrine use. Municipalities can also promote approaches that encourage community participation in coordination with NGOs like PRIA that work closely with communities.

Of late, shaming campaigns have become popular and these involve members from communities or vigilance squads who visit and shame those practising open defecation through methods including photography and whistling. JMC has launched a similar campaign called “triggering”.

While these methods evoke shame, they are problematic and can evoke extreme reactions from community members. Instead, municipalities should utilise behavioural change campaigns that focus on the importance of privacy. Others believe in the importance of functional sanitation infrastructure (Gopalakrishnan, 2016).

Behavioural change and targeted awareness campaigns are required to urge users to utilise toilets. The reasons for continuing with open defecation are varied. For some people, morning ablutions is a time for socialisation. For others, it is a habit they have grown up with and mere access to a toilet is not a reason compelling enough to give it up. Many behavioural change campaigns have been conducted but the focus has always been achievement of targets on construction of toilets, rather than usage.

Dedicated behavioural change is important for many reasons. For example, ritual purity and the sanctity of sacred spaces are important concepts for Hindu households and the impure nature of faeces and its containment within or near the

home is thought of as sacrilegious. This can often lead to a reduced interest in construction of a toilet. This is true of community toilets as well. Many people may not use toilets due to beliefs that the structure is oriented/faces a particular way, or that its location is inauspicious (Alexander et al, 2016). In such cases, it is also important to include local residents in planning processes. Municipalities should break myths and propagate use of toilets. Many households build toilets citing the safety and security of women as a primary reason. Convenience and time saved are other factors that could be highlighted when creating awareness campaigns. Municipalities could also target women and the well-being of young children when convincing residents to build toilets (Alexander et al, 2016). Municipalities should also target schools and empower children to be messengers of change on sanitation and hygiene. Activities can include rallies, seminars and competitions of various types for children.

As evident from the survey results, the pace of constructing household toilets under the SBM could do with enhanced momentum. In many informal settlements, municipalities display an inability to facilitate construction of toilets due to issues of contested land, but in such cases, community toilets could be constructed to meet people's needs. These too are covered under the SBM scheme and a notice has extended the SBM's ambit to slums, even if they are on government land. A separate notice has been issued by the Ministry of Environment, Forest and Climate Change, Government of India which has granted general approval for using forest land up to one

hectare for building community toilets under the SBM (Agarwal, 2016). States like Maharashtra have delinked land tenure issues with provision of toilets. The Government of Maharashtra has clarified that No Objection Certificates (NOCs) will not be required from government authorities for constructing toilets on government lands (Making Cities Open Defecation Free, n.d). In many informal settlements, SICs are being encouraged to apply for household toilets and municipalities are being provided with lists to which they are responding positively. PRIA team has also seen situations where community toilets have been constructed but are not inaugurated or where the inaugurations are pending for months. These too have been brought to the notice of municipalities by SICs.

Community toilets have often failed in India due to hygiene and maintenance issues, and their use is often affected by functionality, cleanliness, and supply of water. PRIA has advocated the involvement of communities (SICs) and RWAs in the active management of keeping these assets tidy. The Tiruchirappalli City Corporation experimented with volunteerism and local initiative when it joined hands with city-based NGO Gramalaya to encourage women from local slums to care for their community sanitation complexes. The women took it upon themselves to make sure the facilities were well maintained, thereby ensuring the continued patronage of most fellow-residents. Residents were also willing to pay for improved services. Models like these lead to a feeling of ownership, and outcomes of this programme were so favourable that the city corporation is considering trying it out across the city (Gopalakrishnan, 2016).



In Jhansi, there is no sewerage connection. The PRIA survey finds that there is a high level of reliance on on-site sanitation systems and most households rely on septic tank based toilets. Many of these toilets discharge effluents into road side

drains and do not follow CPHEEO norms that mandate cleaning of septic tanks every two to three years. The findings indicate huge numbers of households that had never had their tanks cleaned, or reporting that they did not know when

this activity had taken place (indicating that it may never have been performed). The municipality needs to urgently advertise the importance of tank cleaning and offer these services to residents of both slums and colonies.

As per the Prohibition of Employment as Manual Scavengers (and their rehabilitation) Act, 2013, manual cleaning/emptying of pit and tank toilets is prohibited. As a corollary to this act, municipalities are mandated to adopt mechanical processes of cleaning. However, the survey results show, 36 per cent of city respondents said that toilets were cleaned manually while 18 per cent said a combination of mechanical and manual processes were utilised. This is a serious offence that the

municipality must address. Fines must also be imposed on private contractors who often force local labourers into manual scavenging. The municipality must also distribute safety kits to local labourers and offer them contractual jobs if the body is understaffed. An emphasis on regular cleaning is necessary, because infrequent cleaning leads to solidification of sludge at the bottom of the tank/pit which is hard to remove with low-powered machines. Proper trucks also need to be put in place that can carry septage hygienically to Septage Treatment Plants (STPs). Cities like Bengaluru are in the process of implementing 24x7 monitoring processes for STPs. This too is something the JMC could implement.



Waste Management

Waste management is a critical aspect of sanitation services. JMC has recently embarked on a door-to-door household waste collection drive in all sixty wards of the city, but is yet to launch a formalised segregation drive. As indicated above, despite limited spread of awareness, some households do practice waste segregation and municipalities could seek ward wise information and then launch targeted campaigns. Segregation at source is pivotal for many reasons. One, it allows for a high rate of recycling at the household level. Two, different kinds of waste can be treated using different methods. Three, the process is time and resource efficient since it puts onus of segregation on the households. Municipalities must also frame rules that empower officials to fine households that do not practice segregation at source. As per Solid Waste Management (SWM) Rules, 2016, municipalities are also empowered to collect charges for waste collection and levy fines. The municipalities, on their part, need to ensure vehicles that transport waste have compartments so that waste does not get mixed. Once this is done, organic waste can be directly dumped/composed/used in landfills, while dry waste

can be further processed as per requirements. Processes like these reduce the load on the environment as well. Waste material can either be reused or converted. Some municipalities are utilising innovative techniques that produce biogas from waste, which can be used as a source of electricity.

Many cities have distributed two dustbins to residents so that waste can be segregated. While some cities have charged residents, other have used funds from the SBM or the Smart City Mission. The JMC must also follow suit and implement the SWM Rules, 2016. To gain a lead over other cities, the JMC could advocate a three-bin strategy, where a third bin is reserved for sanitary waste. Mixing of sanitary waste with dry contaminates the waste and makes processing difficult. Waste collectors too are at risk since they often handle waste without gloves. While the municipality must endeavour to provide the required safety equipment, it must also realise that manually segregating sanitary waste is often a topic of taboo, and exposes those segregating to disease. Municipalities must also implement

another section of the SWM Rules, 2016 pertaining to the involvement of rag pickers. The new rules help in the integration of rag pickers, *kabadiwaalas* and waste pickers from the informal sector into the formal sector.

Other cities have displayed high levels of motivation and carried out many activities to address the problem of waste management. The municipalities in West Bengal have been granted stationary and mobile solid waste compactor machines which allow for effective garbage management. These compactors allow for extended use of dumping ground as they reduce the overall volume of the accumulated waste in addition to being instrumental in reducing

transportation costs. In Pune, rules are being introduced that suggest that new housing societies should have their own waste processing plants. Many experts believe that decentralised waste management is the way forward. Such a measure will require an amendment in the development control rules. The initiative will involve door-to-door garbage collection, segregation at source, processing of recyclable waste, green waste and e-waste, along with collection and transportation of silt from drains (Manohari, 2016).

JMC can also develop an application like the Swachh Delhi App which could be used to register complaints on the basis of which waste can be collected from public areas, roads and streets.



Complaints

The sample households were asked questions regarding complaints in three areas: water outlets and drainage, solid waste management and waste collection and toilets. Across these sections, the number of complaints filed was low. This should not be taken as satisfaction with service delivery. Many respondents reported that they did not complain because they felt the situation would never improve. Slum dwellers said they feared retaliatory action and did not want to risk eviction. Two aspects need to be understood here. One, those who complained often did so multiple times and about more than one issue, which is indicative of dissatisfaction. Two, a large number of complaints were filed through councillors. The

municipality needs to formalise a system that allows for complaints to be filed easily and such a system should allow for process tracking, as well as escalation. A system needs to be put in place which provides guaranteed and timely redressal of complaints. SLB benchmarks indicate the maximum time in which complaints should be resolved but the survey findings are far from this benchmark. The municipality could set up a 24x7 central helpline, SMS service, and a dedicated mobile phone application with provisions for photo capture and detailing about the complaint. These could be initial steps. Systems should be made less complicated and bilingual so that people are able to file their complaints easily.



Ration Cards, Income and Aadhaar Card

Many residents of informal settlements have been working closely with PRIA and their respective SICs to seek BPL cards so that they can avail

benefits provided to them by the government. SICs have also requested for Aadhaar camps that have allowed greater accessibility as well

as awareness generation regarding the same. Municipalities have often obliged and could continue to set up camps in wards that allow residents to obtain these services as well as connect their cards to biometric systems so that



Conclusion

Based on the findings of the survey of sixty wards and 6,582 families, it is clear that the historic city of Jhansi is a mixture of good and bad sanitation practices like most Indian cities. DUDA should do a thorough inspection of slums based on the accepted definition and revise its listing since the actual condition of households is quite different and many would not fit into the categorisation of slums. The history and culture of the city plays a huge role in people's attitudes towards its sanitation practices. For example, open defecation is still seen as a form of socialisation. It also affects people's will to maintain or convert *kutcha* houses into *pucca* ones due to traditional and emotional reasons. The areas in the outskirts of the city that were included into the municipal limit after the last delimitation process may witness slower development. It is important to evaluate these areas, specifically in terms of basic services like access to water.

The open drainage system in Jhansi is vulnerable to overflows and consequently unhygienic conditions, which affects the entire city during monsoons. It is encouraging to see that the majority of the water outlets in colonies and slums were *pucca*. However, the remaining 3 per cent of water outlets in colonies and 4 per cent in slums which have *kutcha* outlets often suffer from spillage of waste water and are vulnerable to damage in case of higher load. Slums seem to fare better than colonies in various aspects, one of the major ones being having *nallah* that are connected to the main drainage systems – ensuring safe dispersion from kitchen and bathroom outlets. However, slums suffer in terms of maintenance

benefits can be sought under the National Food Security Act. PRIA's presence in the informal settlements of Jhansi through SICs could be utilised to meet this goal.

of drainage systems and they have to often undertake the cleaning themselves without help from the municipality.

The lack of complaints to the municipality in terms of services is a reflection of the lack of trust among the people in the complaint redressal system. This was further confirmed by the analysis of low levels of complaint adherence and redressal by the municipality. The lack of redressed complaints or limited maintenance of service systems also reflects the shortage of funds at the municipality. It is important to extend more funds and functionaries to the municipality, who can also levy service charges, revenue from which can be used for betterment of services.

While JMC's focus on door-to-door waste collection and waste segregation has had some impact, the waste segregated at source (though to a limited extent) does not remain segregated at the collection ground. This renders the whole exercise meaningless. There is a need for powerful behaviour change campaigns as well as a city sanitation plan incorporating collection, segregation of dry, wet and hazardous waste and their respective treatment to ensure sustainable and environmentally friendly development of the city. It is encouraging that in the city, NGOs and organisations like Muskaan Jyoti Samiti, Arva Associate Jhansi, S.R. Techno Gwalior, Om Motors and Construction Jhansi, Society for Education and Welfare for All Jhansi and J.R.M Group Jhansi play a significant role in collection of waste from households.

However, a significant number of households across the city practise unsanitary and improper waste disposal in open spaces, ponds or *nallahs*, streets as well as burning of waste, which can cause serious hygiene problems. This is due to lack of waste collection services and should be taken by the municipality on a priority basis. Erratic sweeping of roads without any fixed schedules in multiple wards also leads to such improper practices of waste disposal. This also happens to be the dominant complaint from most wards.

Considering the high dependency on piped water, Jal Sansthan in alliance with Jal Nigam and municipalities should ensure the water is treated and free from common forms of infection. It is encouraging that the majority of Jhansi receives water all seven days of a week or at least every alternate day. However, a significant percentage of households receives water less than 30 minutes on the day of supply. The lack of availability of municipal water and insufficient supply of water surface as dominant limitations in the water services of Jhansi.

Open defecation still remains a problem in many wards of Jhansi, with members from

10 per cent slum households and 8 per cent colony households practising it. This exposes them to both safety and hygiene-related risks, with adolescent girls and women particularly vulnerable to molestation and rape. This is one of the biggest challenges facing JMC and necessitates the need for severe behavioural change campaigns, information dissemination sessions and public dialogue to change attitudes. The issue of open defecation as well as the fact that majority of the toilets across the city have been constructed out of personal funds shows limited effects of sanitation drives like SBM and is linked to problems of fund clearance and disbursement under SBM. Various issues such as delay in sending the second instalment on behalf of the JMC as well as people mis-utilising these funds have prevented a wider spread of SBM's effort and the JMC should look into this urgently.

Disturbingly, a majority of households that have their toilets connected to septic tanks or soak pits have not cleaned their pits. This needs to be taken up on a priority basis by the JMC as the city is exposed to unhygienic waste. JMC also needs to address the issue of the continuation of manual scavenging, which is legally prohibited.





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Annex 1

SAMPLE SURVEY PREPARATIONS AND TRAINING PROGRAMME



Designing the Mobile Application

The sample survey is undertaken by our enumerators who visit specified (a section on sampling follows) sample houses, seek the required information and enter it into the application on their mobiles. Data is collected on CommCare¹⁰, an application designed and supported by Dimagi. CommCare allows users to code a questionnaire into the application, which is accessed and filled using android mobile phones. The application can be used offline (in areas where internet is not easily available) and is compatible with various languages, including Hindi. There are many advantages to using a smartphone and the CommCare software, some of which are detailed below:

- (i) The process is resource and time efficient since no transcribing is required to be done. Data is immediately synced to a server, which makes remote access possible. Conducting the survey on mobiles allowed us to save huge quantities of paper helping with costs as well as efficiency. Data collected for the sample survey is accessed in Microsoft Excel using connections between excel and the server hosted by CommCare, and updated at the press of a button after which connected pivots and charts automatically refresh. Updated data can thus be accessed anywhere.
- (ii) Certain validations, conditions, and skip logic can be built into the application, which prevent various types of mistakes and errors. This is an advancement over the use of paper-based surveys in numerous ways. For example, mobile numbers less than ten digits are not accepted by the application. Enumerators are also unable to skip questions that are considered compulsory. Deeply embedded skip logic is also present which presents different sets of questions depending on whether slums are being surveyed, or colonies.
- (iii) In case of mistakes or errors being detected at later stages, the platform allowed for editing surveys at the back end.
- (iv) All enumerators have unique user names and surveys are geo-tagged, which ensures proper monitoring, as well as the ability to represent information spatially. Other aspects monitored include the version of application used to ensure that no newer additions to the questionnaire are missed out, as well as the time taken to finish the survey, along with the actual time in which it was conducted. Any entries that do not fall within defined parameters are automatically flagged by the system for follow up.

¹⁰ <https://www.dimagi.com/products/>

(v) The use of mobiles allows for photo capture, which our enumerators use to show ground realities as well as corroborate data they have filled.

(vi) Images are also used as part of questions which help enumerators and respondents achieve clarity. In our application, images include different types of toilets, water sources as well as outlets.

(vii) Questions and options can be updated at any time without effecting the analysis template or data filled earlier.

Most importantly, both enumerators and respondents found the process exciting and new. Many of them had never utilised a smartphone before and thus found this to be a form of personal development as well.



Procuring Handsets and SIM Cards

PRIA procured 15 smartphones for each city, ensuring the following minimum standards:

- Smart phone operating at least Android V.6.0 (Marshmallow)
- Five-inch touch screen
- Battery size of 2800mah and above
- Multilingual support
- 8 MP primary camera with auto focus and flash
- Equipped with Global Position System (GPS) technology
- Ram of 2Gb or above

Enumerators were to procure their own SIM cards before undertaking surveys. A 500mb plan per user per month would allow for data syncing and GPS capture.

All users were given instructions on management and maintenance of instruments. Before handing them over to the supervisors and enumerators, all mobile sets were equipped with screen guards and a pouch. Users were also advised to ensure that the mobile sets are fully charged before they start the survey.



Training Programme

A brief of the points covered in the training follow:

- a) **Introduction to ECRC**
The participants were introduced to the objective, process, methodology and the intended outcomes of the project.
- b) **Understanding water and sanitation services, from the city's perspective**
The project being largely sanitation oriented, participants were given intensive education modules, which helped them understand the broader picture of water and sanitation

services from the city's perspective which then governed the shape of our research.

- c) **Understanding the survey questionnaire**
The survey questionnaire was discussed in detail with the participants. Each section of the questionnaire was explained along with the logic behind the questions for the participants to understand clearly.
- d) **Introduction to smartphones**
Participants were introduced to the basics of using smartphones through which

the surveys were to be undertaken. The smartphones were provided by PRIA, and were chosen based on predefined parameters. This training was necessary as many participants had not used a smart phone before. The training also focussed on the use of GPS, and how to ensure reliable and accurate readings.

e) ***Understanding the CommCare application***

The second stage of introduction to smartphones involved the participants exploring and running the CommCare app to understand its features and how to use it.

f) ***Understanding survey etiquette***

The workshop then moved to the ethics of data collection where participants were explained the etiquettes of survey collection and the importance of undertaking data with honesty.

g) ***Understanding sampling***

The following session explained the sampling methodology and the way in which households should be selected. Participants were introduced to the right-hand technique and skip-interval. Challenges in following the selection methodology were also outlined along with alternate solutions.

h) ***Field work simulation***

The participants were then acquainted with aspects of logistics, targets, expectations, selection of household, etcetera for field work. This was done through a group exercise, which aimed at familiarising the teams with nuances of the survey methodology.

i) ***Pilot testing***

Following this, participants were asked to go to their allocated field sites and practically try out the survey on field.

j) ***Experience sharing***

Experiential learning through the field was the basis of the next module, which was meant to discuss their learnings and observations. They were encouraged to speak about their experiences with the application, the level of comfort of the respondents and their attitudes, their use or misuse of rules of sampling and more.

k) ***Feedback session***

The sharing was then followed by one of the PRIA facilitators transferring all the data onto an excel sheet and explaining the possible mistakes or errors in the data collected. This session explained why it was important to understand the logic of questions and answers.

l) ***Mock interviews***

In this session mock interviews were conducted to improve the participants' interviewing skills. All the participants participated in 'one to one' interviews. Pairs were made and an observer sat through every interview. All the observers gave their feedback on each enumerator and highlighted areas of improvements.

m) ***Monitoring protocol and structure***

This session explained the levels of checks and balances kept at place to monitor the quality of surveys. The supervisors and survey administrators were introduced to the way the different components and stages of monitoring were to be done, the automated as well as the physical checks necessary and the consequent monitoring and approval required at each stage to ensure the quality of surveys.

n) ***Participant feedback***

This session concluded the workshop with some participants giving their feedbacks and overall experiences from the workshop.



Annex 2

PERMISSION LETTER FROM MUNICIPALITY

Municipalities were briefed about the surveys and informed that the data would be shared with them. A letter of consent was also issued by the municipality, a copy of which was provided to all the enumerators and supervisors.

कार्यालय झाँसी नगर निगम झाँसी।

पत्रांक:- 570/न0आ10/न0नि/2016-17 दिनांक 02.12.2016


श्री सुधीर कुमार सिंह
(कार्यक्रम अधिकारी)

प्रिया- मिशन कम्पाउण्ड झाँसी।

विषय:- सक्रिय नागरिक-क्रियाशील शहर कार्यक्रम के अन्तर्गत परिवार स्तरीय सर्वेक्षण के सम्बन्ध में सहयोग एवं स्वीकृति के सम्बन्ध में।

कृपया उपर्युक्त विषयक सन्दर्भ ग्रहण करने का कष्ट करें आप द्वारा नगर निगम सीमान्तर्गत सक्रिय नागरिक क्रियाशील शहर कार्यक्रम के अन्तर्गत झाँसी शहर में सेनेटेशन से सम्बन्धित सेवाओं और उसके उपयोग के सम्बन्ध में नागरिक भागीदारी को लेकर कार्य किया जा रहा है, इस कड़ी में नागरिकों की प्रतिक्रियायें जानने के लिये मोबाइल आधारित सर्वेक्षण किया जाना है। इस सन्दर्भ में आपको अवगत कराना है कि नगर निगम क्षेत्र में 60 वार्ड है और प्रत्येक वार्ड में पार्श्व मौजूद है, पार्श्व से सामंजस्य बनाकर ही सर्वेक्षण का कार्य किया जाये तथा आम आदमी से सहजभाव से जानकारीया ली जाये और सर्वेक्षण उपरान्त एक प्रति/आंकड़ा, नगर निगम को उपलब्ध करायी जाये। सर्वेक्षण के दौरान यदि आपकी संस्था के किसी भी कर्मचारी/सुपरवाइजर/मैनेजर द्वारा जनता के प्रति अनिमित्तों की शिकायत पायी जाती है तो अधिनियम की सुसंगत धाराओं के अन्तर्गत कार्यवाही करने के लिये नगर निगम स्वतन्त्र होगा। सर्वेक्षण कार्य के वास्तु नगर निगम किसी भी प्रकार का कोई मानदेय नहीं देगा और ना ही संस्था इसके लिये मांग कर सकती है।

उपरोक्त शर्तों के अधीन नगर निगम आपकी संस्था प्रिया को नगर निगम सीमान्तर्गत सर्वेक्षण हेतु स्वीकृति प्रदान करती है।


नगर आयुक्त
नगर निगम झाँसी

प्रतिलिपि:-

1. मा10 महापौर को सादर सूचनार्थ प्रेषित।
2. अपर नगर आयुक्त को समय-समय पर सर्वेक्षण का फीडबैक लेते रहे।
3. नगर स्वा0 अधिकारी को इस आशय से प्रेषित कि संस्था को समय समय पर अपना सहयोग प्रदान करें।
4. गार्ड फाइल हेतु।

नगर आयुक्त
नगर निगम झाँसी।



Annex 3

SAMPLING PLAN FOR WARD 9 IN JHANSI

Total No. of Households:	900
No. of Households living in Slums:	44
No. of Households living in Colonies:	856
Skip Interval:	9

Sl. No.	Name of Area	Status	Households	Sample size
1.	Khushipura	Slum	44	5
2.	Rajkiya Pustakalay and Shiksha Bhavan	Colony	80	9
3.	Madiya	Colony	300	33
4.	Kaali Mai	Colony	426	47
5.	Zila Panchayat	Colony	25	3
6.	Chirtan Hospital	Colony	25	3
Total Households			900	100

About PRIA

Established in 1982, PRIA (Participatory Research in Asia) is a global centre for participatory research and training based in New Delhi. Currently, PRIA has field offices in several states of India and partnerships with 3000 NGOs across the global North and South to deliver its programmes on the ground. Over 35 years, PRIA has promoted 'participation as empowerment', capacity building of community organisations, and people's participation in governance. Initiatives are undertaken in the overall perspective of 'making democracy work for all' – in the political system; democratic culture in families, communities, and society; and participatory democracy with active citizenship. PRIA's programmes on the ground focus on promotion of participation of the poor, especially women and youth, to claim rights and basic services.

Through building knowledge, raising voice and making democracy work for all, PRIA realises its vision – of a world based on values of equity, justice, freedom, peace and solidarity.

About Engaged Citizens, Responsive City

Engaged Citizens, Responsive City is a four-year long intervention supported by the European Union which focuses on strengthening civil society of the urban poor to participate in planning and monitoring of sanitation services. The project works across 3 cities in India (Ajmer in Rajasthan, Jhansi in Uttar Pradesh, and Muzaffarpur in Bihar). It primarily engages the urban poor through capacity building activities to enable them to become active citizens, and to use the new skills learnt to participate in planning (at city level) and monitoring (at the ward level) of sanitation services.

Partners in this change include urban poor and middle-class residents, with leadership of young women and men; mayors, elected councillors and related government departments; traders and market associations; civil society, academia and media; and women sanitation workers.

These stories of change document the process of engaging the urban poor, organising them through Settlement Improvement Committees (SICs) in each informal settlement, training young women and men SIC members to take leadership and generating city-wide community-led data of sanitation services. The consequent demand by citizens has resulted in their municipalities becoming responsive to their needs.

ABOUT THE REPORT

The sanitation survey in Jhansi was undertaken by PRIA to generate citizen-led data, with a focus on informal settlements (slums) and colonies in the city.

Data collection was undertaken as part of the Engaged Citizens, Responsive City project supported by the European Union, which strengthens participation of the urban poor in citywide planning and monitoring. In our efforts to establish a platform that allows all residents to voice grievances, issues and aspirations and collectively develop strategies, authentic and lucid data emerged as a crucial piece of the puzzle. The ward-level, disaggregated data available in this report meets this need and provides information that supports participatory planning.

The survey results will be of use to municipalities, parastatals, civil society organisations, development agencies and engaged citizens working together to make Indian cities responsive, inclusive and sustainable.



This project is implemented
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This project is funded
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