Understanding Community Based Usage of Water and Sanitation in Informal Settlements in Bengaluru

Study Conducted for the

Center for Urban and Regional Excellence, New Delhi

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The Client

- Center for Urban and Regional Excellence (CURE) is advising Urban Development Department (UDD),Government of India on basic infrastructure development as wholistic solutions and resilient communities, citywide slum upgrading and environmental resilience plans.

The Project

- Develop an appreciative enquiry to citywide slum upgrading in Bengaluru with a focus on behavioral change, community engagement and participatory methods;

- Improving the quality-of-service provision in slums/ informal settlements in Bengaluru.

- Addressing climate change and the resilience discourse through an ethnographic/ gendered lens

- Understanding settlement development, community engagement, behavioral change, participatory processes, information and communication dissemination, gender, diversity and disabilities from a bottom- up approach.

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Methodology

Understanding the Context

Literature Review-

analysis of papers on research, policy etc. on low-income settlements in Bengaluru on WASH interventions in the city

Interviews

with key members of the nonprofit, activist, academic and government infrastructure in the city-through semi structured, open ended conversations

Broad-brush Mapping of slums/ informal settlements in Bengaluru.

Identification of Settlements

- Age, location and size of the settlements, types of community, infrastructure available and access to the community

- Clusters based on Mapping

- Partner (APSA) Locations

Community Consultations

Over 25 consultations with women across informal settlements

Note: this is not intended to be a comprehensive study but an observational study in selected low-income settlements where the team has connections with civil society organizations. Data collected has been quantified to the extent possible. Extrapolations are best estimates.

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Narrative on Slums

Ambiguity in Definitions

- Under *section 3* of the *Slum Areas (Improvement and Clearance) Act, 1956* slums are:
'*areas where buildings are in any respect unfit for human habitation, by reason of dilapidation, overcrowding, faulty arrangement and design of such buildings, narrowness or faulty arrangement of streets, lack of ventilation, light, sanitation facilities or any combination of these factors which are detrimental to safety, health and morals'*
- **National Sample Survey Organization** (NSSO) considers a slum to consist of at least 20 households
- **Census of India 2011** sets the threshold at 60–70 households

- The official classification of slums includes:
  - **Notified Slums-** areas notified as slums by the municipality or urban local body
  - **Non-Notified Slums-** all other slums, not officially notified by the municipality or urban local body

Ambiguity in Numbers of Slums in Bengaluru

- According to the Karnataka Slum Development Board (KSDB) 2011, there are 597 slums are located in Bengaluru.
- No slums have been notified since 2011.
- BBMP has another unofficial listing.

Need for New Definitions

- The new poor are migrants to the city in the last 1-10 years and typically live in temporary settlements, near construction sites, or in tenements in peripheral areas of the city (*Roy Choudhury 2011*)

- A study (Krishna et al, Duke Univ. 2014 with Jana Urban Foundation) proposes a recategorization of *informal settlements* in Bengaluru:
  - **new migrant settlements,**
  - **very low-income settlements and**
  - **low-income settlements**

(Very) Low-income Settlements

Small/medium size shelter/ units and little space between houses, paved but narrow inner roads and some small brown roofs

Notified Slums

compact area of at least 300 population or about 60–70 households of poorly built congested tenements, in unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities'

Non-Notified Slums

single story structures- blue tarpaulin covered mud shelters, tin and wooden sheds, concrete buildings. Access to water, electricity and sanitation is facilitated through makeshift means

New Migrant Settlements

temporary settlements, with roofs that generally consist of blue plastic sheeting (tarpaulins)

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Mapping of Informal Settlements in Bengaluru 2011-2024

2011

KEY
Bengaluru Boundary
KSDB Notified Slums 2011

KSDB 2011 survey mapped by Indes-Opencity.
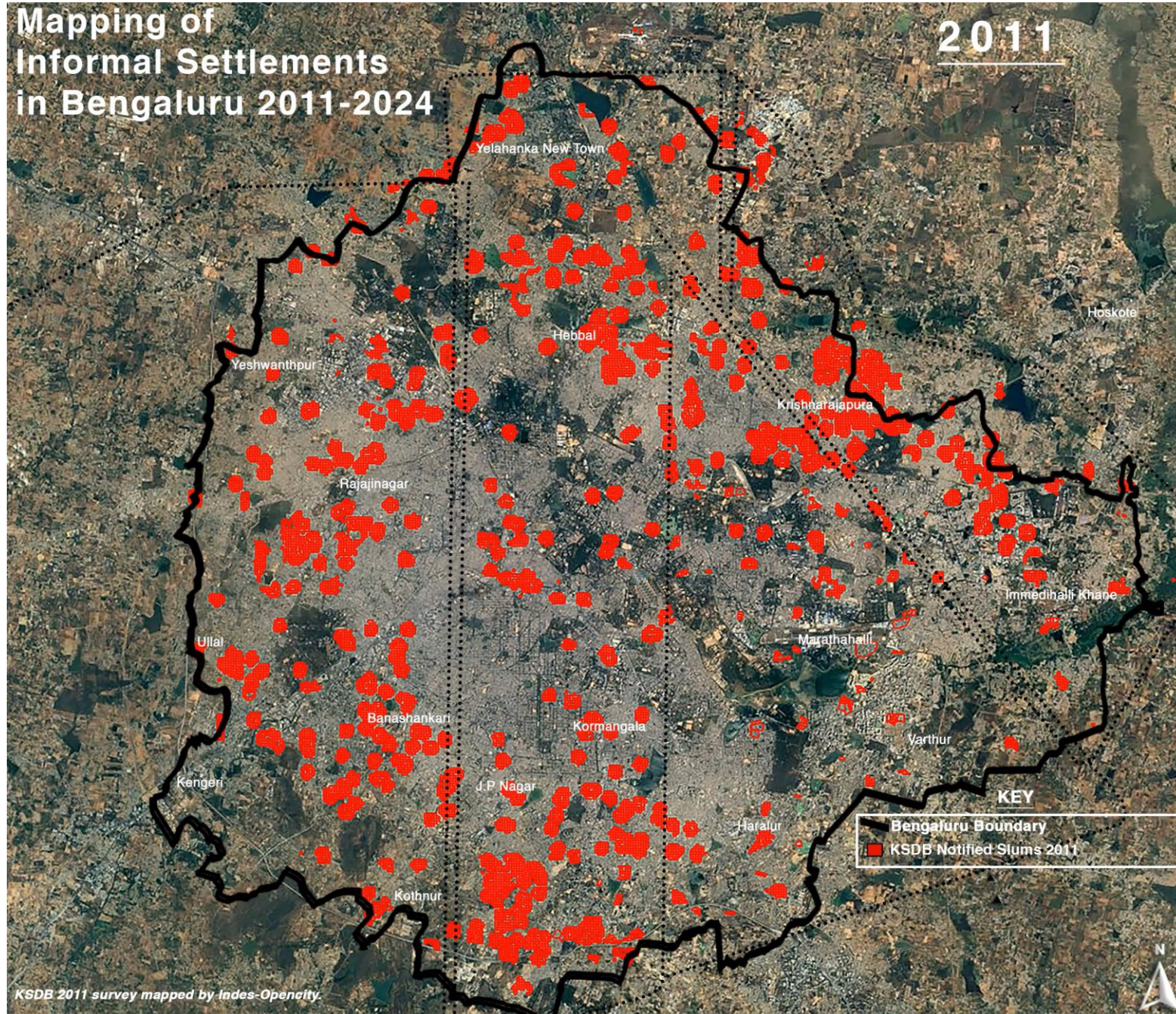
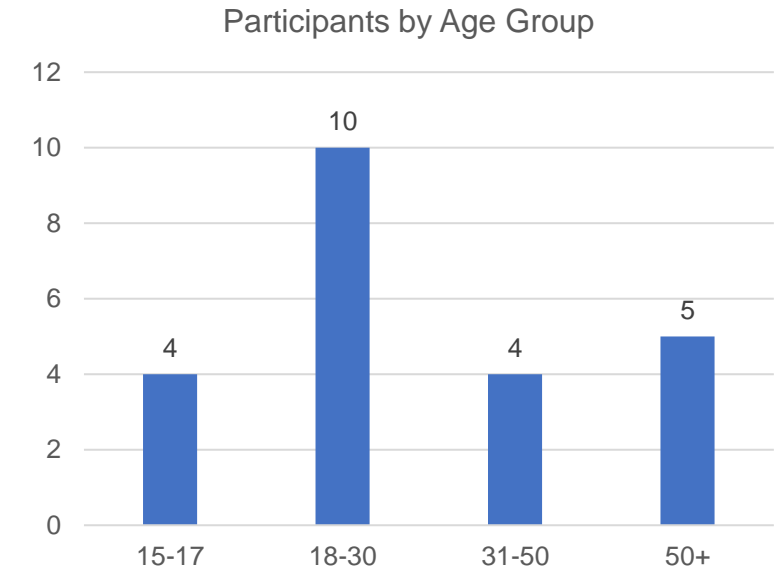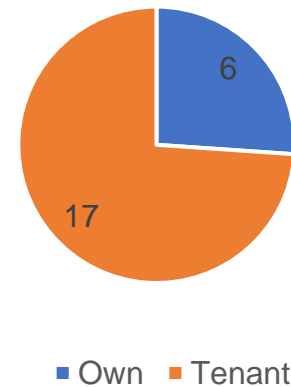| Notified Slum- Byrasandra, Jayanagar	Non-Notified Slum- ISRO Colony, Indiranagar	Migrant Population- Pai Layout	Low Income Settlement- Islampura
40+ years	40+ years	20+ years	40-50 years
800 families	4-500 families	Pockets of 6-10 sheds	300 families
5 acres	2 acres	on the edge of a 28-acre settlement	65 acres
Jayanagar, South Bengaluru	Indiranagar, West Central Bengaluru	Mahadevapura/ Whitefield, West Bengaluru/ Periphery of the City	West Bengaluru
Government Land	Government Land	Private/ Agricultural	Private plot ownership
Older Kannadiga, Andhra and Tamil families (2-3 generations); mostly scheduled caste	Older Tamil and Telegu families (2-4 generations); mostly scheduled caste	Older Kannadiga families from North Karnataka in blue tarp tents; recent migrants from north India and Nepal in chawls/ tenements	Muslim Kannadiga families; at least 3-4 generations

Mapping and Community Consultations

Participants by Age Group

Name of Settlement	Type of Settlement	No of people in consultation	Type of People
Byrasandra, 3rd Block, Jayanagar (in the Jayanagar cluster area)	Notified Slum	8	Women, home based workers, 1 woman with disabilities
ISRO Colony Slum, Indiranagar	Non-Notified Slum	2	Young women
Pai Layout, Mahadevapura (in the KR Puram/ Whitefield cluster area)	Temporary Migrant shelters in middle-income settlement	7	4 women from migrant (North Indian and Nepali) families; and 3 women from North Karnataka that have lived in the area for over 20 years
Islampura, Vimanapura (Minority- Muslim settlement)	(Very) Low-Income settlement	5	4 Muslim women and 1 Hindu woman

Home Ownership

■ Own ■ Tenant

Access to Toilets

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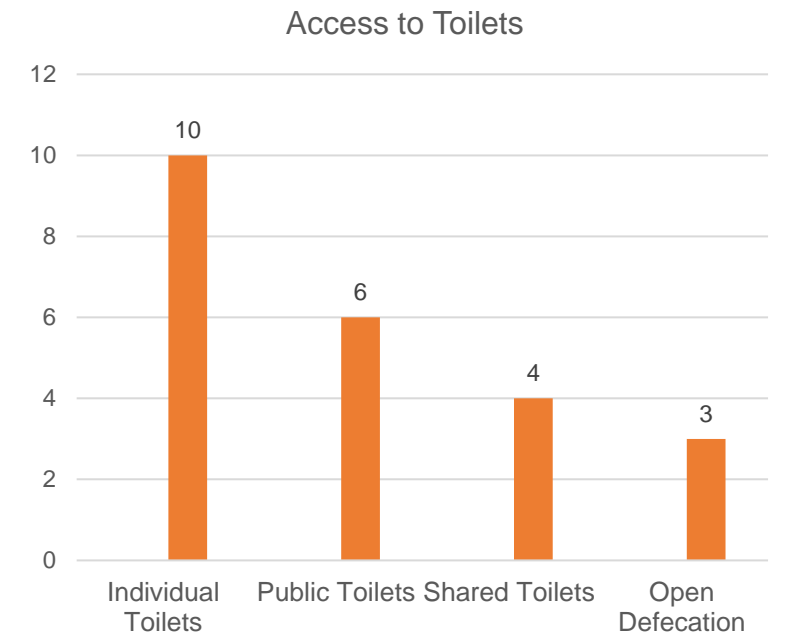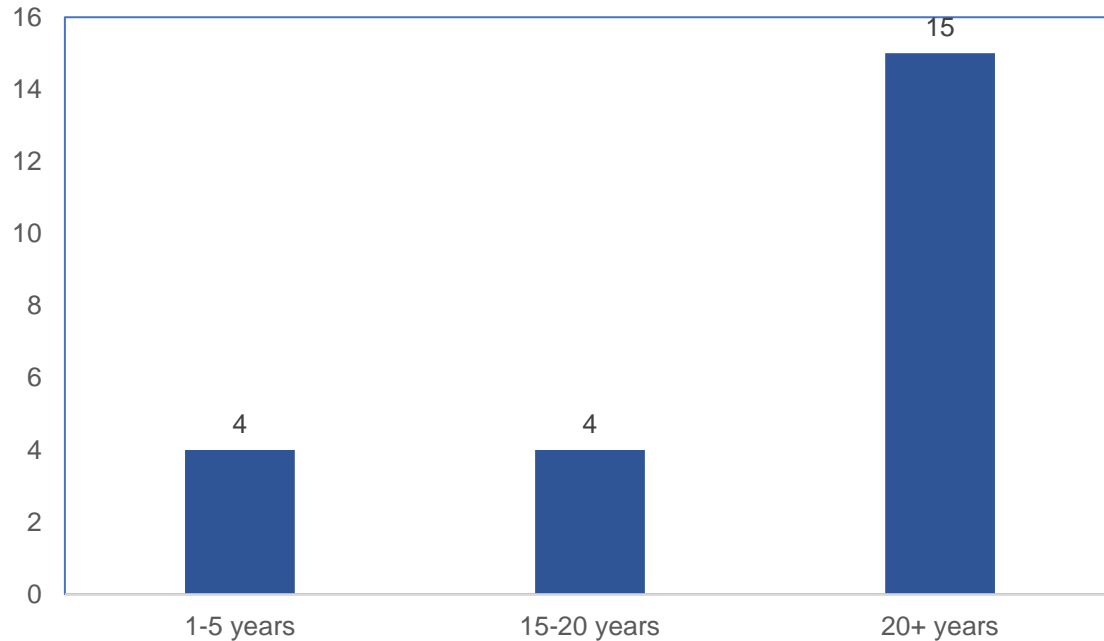
Where to live and what to live in

Location-proximity to work, schools and colleges

Connection to Settlement/ Community

Tenure

Initial shelter- blue tarpaulin and tin shed construction

5-10 years-invest in pucca/ concrete one room unit

Years Spent in Settlement

16		
14		15
12		
10		
8		
6		
4	4	4
2		
0		
1-5 years	15-20 years	20+ years

10+ years (plus tenure)- incrementally build multistorey multi family units with individual toilets

10+ Years-Stronger sense of rootedness- greater demand for services from BBMP

Observations- Inadequate WASH Infrastructure

Only Four Public Toilets in ISRO Colony Slum for 4-500 families; two are closed due to poor lighting and lack of repair

Private Toilets in Byrasandra Slum- makeshift, under stairs, clogged, inadequate water supply; most have no bathing area

Inadequate storm water drainage causes flooding along the pathways whenever it rains

- *Many toilets are shared by neighbours in Islampura due to low water pressure.*
- *No public or community toilets in Pai Layout; blue tarp families use school toilets, apartment toilets or resort to OD.*

"People are good here but no one cares about the poor. There are no public toilets in the layout. We have to manage somehow. Our house gets flooded every time it rains. But we are not complaining" Savitriamma, Pai Layout

Observations- Poor Quality of WASH Infrastructure

Water and Sanitation Pipelines are corroded-over a decade old and poorly managed

Sewerage lines regularly mix with water supply lines causing contamination and disease

lack of operation and maintenance of WASH infrastructure

Access to the Public Toilet in ISRO Colony slum is poorly lit and along a deeply polluted and flood prone rajkaluve

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Observations- Poor Design of WASH Infrastructure

Poor-quality toilet design has adverse effects on Women, Elderly and Non-Binary Community

- lack of gender sensitive design- doors, locks, roofs, and walls- causes stress and deterrence
- non–gender-segregated toilets results in harassment and violence
- poorly maintained facilities leads to disease
- Inappropriate locations for toilets

Framework for Analysis- Integrated Behaviour Model (IBM- WASH)

Levels	Contextual Factors	Psychosocial Factors	Technology Factors
Societal/ Structural	Policy and Regulations, Climate and Geography	**Leadership/ Advocacy, cultural identity**	Manufacturing, financing, and distribution of product, current and past national policies and promotion of products
Community	Access to markets, access to resources, built and physical environment	Shared values, collective efficacy, social integration, stigma	**location, access, availability, individual vs collective ownership/ access, maintenance**
Interpersonal/ Household	**Roles and responsibilities, household structure, division of labour, available space**	**Injunctive norms, descriptive norms, aspirations, shame, nurture**	Sharing of access to product, modelling/ demonstration of use
Individual	**Wealth, age, education, gender, livelihoods/ employment**	Self-efficacy, knowledge, disgust, perceived threat	Perceived cost, value, convenience and other strengths/ weaknesses
Habitual	Favourable environment for habit formation, opportunity for removal of barriers	**existing water and sanitation habits, outcome expectations**	Ease/ Effectiveness of routine use of product

Dreibelbis, R., Winch, P.J., Leontsini, E. et al. The Integrated Behavioural Model for Water, Sanitation, and Hygiene: a systematic review of behavioural models and a framework for designing and evaluating behaviour change interventions in infrastructure-restricted settings.

Impact on Society

Adverse Economic impacts on individuals and households
- Most of the women interviewed have barely pursued an education and find it difficult to find jobs

Poor Health Impacts on women and children
- Most of the women were caretakers of younger children when young; married off early and became young mothers
- Despite Covid, most women have little access to soap; face taboos against drying menstrual cloth in public.
- During their periods, women in the settlements bathe less
- Improper storage of water leads to contamination and disease

Psychosocial Stresses and Gender based harassment
- Most of the women and young women bathe early in the morning, fast, are always tense; they control diets (esp. at night) and bathe with clothes on, to avoid shame and prying eyes.
- The women interviewed reported feeling shame, fear, embarrassment when defecating outside

Water and Sanitation, Community, and Power

Women of Byrasandra have coalesced around their scheduled class and gender identity

Identity Driven

The Tamil community of ISRO colony have a cohesive representation in the local governance mechanism despite being non notified

Gender Driven

Religion / Caste Driven

Most of the very low-income/ migrant shelters in Pai Layout are women headed and have no access to governance

Older minority community of Islampura have a cohesive representation in the local governance mechanism

Demand Services from BBMP/ BWSSB

Climate Change, Gender and WASH

Erratic/Severe weather related crises

non notified slum of ISRO Colony floods due to the storm water drain; Pai Layout, Islampura and Byrasandra all *flood in the rains*

Disease

lack of sanitation facilities, poor water supply and storage- leading to *disease* and affecting *reproductive health*

Increased Heat Impact

the last two years, in the *extreme heat of the summer,* water supply is drastically reduced resulting in *demand for tankers; lack of ventilation and tin roofs* increased *heat impact* in houses

Conclusions

Inequity in Access to _Power and Bureaucracy_

Community relationships in all the settlements with the local bureaucracy defines **quality of the facilitation** of WASH services

Caste, religion, class and gender gap
Power discrepancy between **typically upper caste government engineers and lower caste slum residents**; all site engineers and meter readers are men

Discriminations based on _Language and Paperwork_

Opaque and overwhelming paperwork (often in English); residents **run from pillar to post for basic services**

Insecure ownership, tenure and investment in the future

Insecure conditions stymie access to basic services; **a**accessing **tenure ship documents** is a long and complicated process

Poor Quality of infrastructure, maintenance and service provision

Pipelines are corroded, old and poorly managed; problem solving is inconsistent, **over engineered, rarely ecological or low cost** and usually transferred back to be borne by community

Grievance Redressal

Opaque and unwieldy, especially at the local level; women have little say

Public Participation

Strong Community Participation but acknowledgement and response by **municipality is tokenistic**

Performance benchmarks

Overly quantitative, techno bureaucratic and top down

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Thank You

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