

Discussion Paper

Sanitation Financing in Eight South Asian and Sub-Saharan African Cities



© 2023 International Water Association

Published by the International Water Association. All rights reserved.

Requests for permission to reproduce or translate this material – whether for sale or noncommercial distribution – should be directed to the IWA Media team via the website: www.iwa-network.org.

All reasonable precautions have been taken by the International Water Association to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the International Water Association be liable for damages arising from its use.

Image Credits:

The cover illustration (created to depict sanitation and financing in South Asian and Sub-Saharan African cities) and images on pages 8, 12, 14 and 19 of this publication were generated using Adobe Firefly.

Other image credits (free to use) are as follows:

Unsplash (Pages 5, 6 & 24), Pexels (Pages 10, 16 & 30) and Pixabay (Page 27).

Discussion Paper

Sanitation Financing in Eight South Asian and Sub-Saharan African Cities

Authors/Contributors

Zhang, Kun; Burt, Zachary; Bateganya, Najib L.; Bharmal, Arwa; Chakraborty, Niladri; Chowdhury, Tanvir; Gueye, Mouhamadou; Islam, Shahidul; Kafwembe, Pride; Mansuri, Aasim; Musabaila, Mwiche; Reddy, Malini; Sugantha, Priscilla; Vedala, Srinivas C.; Byansi, Jude Z.

Author Contributions

Srinivas Chary Vedala (ASCI), Malini Reddy (Athena Infonomics, formerly ASCI), Arwa Bharmal (CEPT), Aasim Mansuri (CEPT), Niladri Chakraborty (IIHS), Priscilla Sugantha (IIHS), Najib Lukoyaa Bateganya (Bill & Melinda Gates Foundation, formerly KCCA), Jude Zziwa Byansi (KCCA), Mwiche Musabaila (LWSC), Pride Kafwembe (LWSC), Mouhamadou Gueye (ONAS) discussed the sanitation financing situations in their cities in a series of key informant interviews, which became the foundation for the manuscript content, and provided clarifications to questions in the manuscript development. Zachary Burt designed the interview questionnaires and trained the team on interviews. Kun Zhang (Athena Infonomics) wrote the manuscript based on interview transcripts and program materials from the eight CWIS city partners.

All Contributors

The complete list of contributors, who were either interviewed or provided clarifications in response to questions, from each organization is as follows:

- ASCI: Srinivas Chary Vedala, Malini Reddy, Jyothsna Devi, Devika Ganesan
- CWAS, CEPT: Meera Mehta, Dinesh Mehta, Aasim Mansuri, Arwa Bharmal, Jaladhi Vavaliya
- IIHS: Kavitha Wankhade, Niladri Chakraborty, Priscilla Sugantha
- KCCA: Najib Lukoyaa Bateganya, Allan Nkurunziza, Jude Zziwa Byansi
- LWSC: Mwiche Musabaila, Sharon Chocho, Mwansa Nachula Mukuka, Kennedy Mayumbelo, Pride Kafwembe, Kapanda Kay
- NWASCO: Peter Mutale
- ONAS: Mouhamadou Gueye, Mamadou Lamine Traoré
- SNV: Marc Perez Casas, Shahidul Islam, Tanvir Chowdhury, Shaker Ahmed

Discussion Paper

Sanitation Financing in Eight South Asian and Sub-Saharan African Cities

Interviewers

The team from Athena Infonomics and affiliates led the key informant interviews:

- Shamima Aktar | **Bangladesh**
- Ramkrishna Paul, Arjun Sharma, and Anupama VS | **India**
- Laure Henry | **Senegal**
- Jacinta Nangabo | **Uganda**
- Josephine Goma | **Zambia**

Reviewer and Editor

Kimberly Worsham, Juliet Willetts [1] and Kirsty Carden [2] reviewed and edited the manuscript.

Special Thanks

The authors wish to thank Alyse Schrecongost and Radu Ban from the Bill & Melinda Gates Foundation for their guidance in conceiving the idea for this manuscript and throughout the manuscript development.

[1] Chair of the IUS Task Force Publications Subgroup

[2] Member of the IUS Task Force Publications Subgroup

Introduction

In recent decades, discussions have been happening globally around sanitation financing, on aspects such as funding gaps and challenges (Annamraju, Calaguas, & Gutierrez, 2001) (Mehta & Knapp, 2004), regulatory reforms (especially on tariffs) for financially sustainable services (Rees, Winpenny, & Hall, 2008), and innovative financing methods and tools for both the public sector and households (Trémolet, Kolsky, & Perez, 2010). However, few studies have discussed at length the key factors in the legal and regulatory context that shape how finance for sanitation is allocated in general, such as the mandate for sanitation and different sanitation priorities across countries and cities. This paper seeks to shed light on these influencing factors in the enabling environment through an analysis of the sanitation financing situation in eight cities in South Asia and Sub-Saharan Africa.

Across the case study cities, there has been an increase in focus on sanitation over the past 5–10 years, as manifested in increasing numbers of projects and more funding. In the cities with Sewered Sanitation (SS), the traditional focus on sewers has been shifting to more interventions to advance Non-Sewered Sanitation (NSS), which is the dominant type of sanitation among the urban poor. In Lusaka, this was enabled through a larger national level effort to improve the regulatory framework for NSS and enable a more coordinated expansion of NSS services. The recent addition of the new Ministry of Water and Sanitation in Zambia has allowed for an increased and centralized focus of issues within the sector and has improved the ability to lobby the central government and other entities for resources.

Similarly in Kampala, the increase in projects on NSS has been helped by having the city government as a central coordinating entity. In Dakar, the utility created a senior position to explicitly focus on financial management of sanitation projects as the utility has seen a significant increase in projects over the past 5–10 years. In the Indian cities, the shift has been mostly driven by central and state government schemes centered around sanitation. The flagship scheme Swachh Bharat Mission (SBM) started in 2016 with the goal of making India open defaecation free (ODF) with a heavy focus on toilet infrastructure, and gradually expanding to cover other segments of the sanitation service chain, especially related to NSS.

In terms of types of financing, there has also been a shift from grant-based financing to loans for the African cities, which has made sourcing financing more expensive. This increased the pressure on the continued improvement in financial management.

Against this larger context of shifting trends in sanitation interventions and funding, a holistic understanding of the sanitation financing situation in this diverse group of cities helps to devise strategies for various types of stakeholders to collaborate and ensure that sanitation services are sufficiently and sustainably funded.

Objectives of the paper

This paper examines key aspects related to utility and government financing for urban sanitation in eight cities in Sub-Saharan Africa and South Asia, including the types of policies that influence decisions on finance allocation within the sanitation sector, resource sufficiency and gaps, equitable allocation to the poor and financial monitoring. The paper discusses general motivations and targets for sanitation financing at the country level, policies and regulations, roles and responsibilities, and strategies adopted for coping with funding gaps.

Through this analysis, the paper seeks to contribute to the discussion of structural issues related to sanitation financing from a perspective of sanitation systems functions. We argue that an inclusive sanitation mandate and an accountability framework with comprehensive performance indicators are critical in driving budget allocation and funding for equitable sanitation interventions that cover the full service chain. The final section of this paper proposes a set of recommendations for national and city level government stakeholders, as well as donors and development financing institutions.



People walking and biking along a busy street in an Indian city.
Unsplash/Makm Photography

Key questions

This paper addresses the following questions:

- 1 Influence of service priorities:**
 - How is urban sanitation service financing influenced by a city's service priorities?
- 2 Sufficiency of resources:**
 - What are the sources of finance for sanitation service authorities, and are they enough?
 - How do service authorities deal with the funding gaps?
- 3 Equity:**
 - Are there dedicated resources for service delivery to the poor, and are these sources sustainable?
- 4 Monitoring:**
 - What approaches are service authorities using for tracking and planning for financing? Do these approaches offer sufficient insights into their financial health?

Methodology

The eight cities discussed in this paper are all supported by the Citywide Inclusive Sanitation (CWIS) initiative of the Bill & Melinda Gates Foundation and selected for the Monitoring, Learning, and Evidence (CWIS MLE) programme. These eight cities were selected for this programme due to the diversity in their demographic, geographic and sanitation system characteristics. Demographically, the cities have populations from barely over 40,000 to nearly 4 million; geographically, they span across South Asia, East Africa, South Africa and West Africa.

With regards to sanitation systems, these cities not only have varying mixtures of sewerred and non-sewerred systems but also belong to countries with diverse policy and institutional setups around sanitation. The range of attributes demonstrated by these cities are characteristic of various developing country contexts; an analysis of the sanitation financing situation in this cohort of cities could offer valuable lessons to many cities.

As the MLE partner in this programme, the team at Athena Infonomics developed this paper based on research and data collected from both the CWIS-MLE programme itself and additional key informant interviews with representatives from the programme partners in these eight cities, including utilities, governments and Technical Support Units to the city governments (academic institutions and NGOs in South Asia).

Interviewees were from the following institutions (in alphabetical order): Administrative Staff College of India (ASCI), Center for Water and Sanitation (CWAS) of CEPT University, Indian Institute for Human Settlements (IIHS), Kampala Capital City Authority (KCCA), Lusaka Water Supply and Sanitation Company (LWSC), National Water Supply and Sanitation Council of Zambia (NWASCO), Office National de l'Assainissement du Sénégal (ONAS), SNV Netherlands Development Organisation (SNV). The number of interviews for each city (only counting unique interviewees) ranged from one to four, depending on the institutional set ups in the cities and partner organizations. Some interviews were conducted with multiple interviewees from the same team in an organization.

Main findings

Context and sanitation mandate

To understand urban sanitation financing, it is important to first identify who is responsible for sanitation service delivery. As the most critical sanitation stakeholder in a city, the local sanitation service authority (SA) acts as the central hub for receiving and allocating finances to execute its mandate of delivering sanitation services to citizens. Here, we define sanitation SA as a public authority which is mandated by law to ensure the delivery of sanitation services in a city through direct service provision by staff or indirect provision via market regulations.

While sanitation can be broadly used to refer to liquid and solid waste management, this discussion paper uses the term sanitation to strictly refer to the management of human faecal waste, including related wastewater effluent and sludge, and excluding drainage or greywater management.



Wastewater effluent and sludge discharge in a river within a city in India.
Image generated on Adobe Firefly

The two most common types of sanitation SAs are city governments and utilities, including water and sanitation (WATSAN) utilities and exclusive sanitation utilities.

Table 1 presents the SAs responsible for SS and NSS in the selected case study cities. The cities are divided into two categories, Indian Cities and Other Cities, for the ease of discussion in subsequent sections.

Table 1. Basic Statistics and Sanitation Service Authorities (2021) for Sewered Sanitation (SS) and Non-Sewered Sanitation (NSS)

Category	City	Country	Population	% Households connected to centralized sewers ¹	Service authority (NSS)	Service authority (SS)
Indian cities	Wai	India	43,000	0%	City government	N/A
	Narsapur	India	64,023	0%	City government	N/A
	Warangal	India	1,157,664	0%	City government	N/A
	Trichy	India	920,000	54%	City government	
Other cities	Khulna	Bangladesh	1,500,000	0%	City government	Regional WATSAN utility ²
	Kampala	Uganda	1,650,800	11%	City government	National WATSAN utility
	Lusaka	Zambia	2,500,000	14%	Regional WATSAN utility	
	Dakar (region)	Senegal	3,800,000	21%	National sanitation utility	

In the four Indian cities, as in most cities in India, the local government acts as the SA for NSS and SS (if the town is sewerage). In Lusaka and Dakar, the utility is the SA for SS and NSS. However, in Kampala and Khulna, the sanitation mandate is split between the city government and the utility for SS and NSS, respectively. This split mandate has caused issues in service delivery coordination and financing, especially insufficient funding for NSS, which will be discussed later.

A key point to note from the table is that except in the case of Dakar, where the SA's mandate is solely for sanitation, the SAs in all other cities are simultaneously responsible for other municipal services. In financing and budget allocation at the national level and at the city level, sanitation has traditionally received less attention and resources compared to competing priorities such as water supply, public health, solid waste management and the environment, especially where the city government acts as the SA. This situation is changing in recent years with an increasing role for city governments in the sanitation space, especially in India due to national level schemes³. Much of sanitation-related funding and interventions have focused on access to toilets and are just now starting to expand into other segments of the sanitation service chain⁴, such as emptying. We will discuss the changing trends in financing later.

¹ Note: This excludes commercial and industrial connections and may differ from combined values available in other sources; e.g. Khulna and Warangal have small-scale centralized piped systems (1% of the population or less), which are managed directly by the households themselves and excluded here. While there is some open defecation (OD) in a few of the cities, the OD percentages are all below 5%. Hence, the percentage of population after subtracting SS access rate is equal or very close to the NSS access rate.

² The sewer network in Khulna is under development.

Sanitation service priorities

Against the larger context of limited role for sanitation vis-à-vis other municipal services, **we examine the question** of *How is urban sanitation service financing influenced by service priorities?* **This is broken down into the following smaller questions:** *How are sanitation service priorities defined for each city? Who determines these priorities? And most importantly, how do these priorities influence financing decisions?* By interrogating these, we find that sanitation financing, especially from government sources, follows the service priorities set by national level authorities via Key Performance Indicators (KPIs) and performance targets.

National focus on sanitation infrastructure, especially for sewerage sanitation and toilets, determines that these receive the largest funding flows. Nevertheless, changes are underway in some of the countries of the case study cities to move more towards financing NSS segments beyond toilet access, as will be discussed in the following section.



Aerial photo of city buildings in India's capital, New Delhi.
Pexels/Ravi Sharma

A key stakeholder in setting city level sanitation service priorities and in budget allocations is the accountability authority of each SA. Accountability authorities are public entities that oversee and manage the performance of SAs. Accountability authorities may use mechanisms such as incentives or penalties for SAs based on their performance, which is usually measured through a set of KPIs.

Some accountability authorities further set KPI targets that SAs need to achieve. These targets are ideally progressive and based on the historical performance of the SAs and their available resources to lay out a pathway for improvements. More often, however, only static long-term KPI targets are set. These KPIs and targets are critical reflections of actual service, as SAs prioritize what is measured, especially that which has the greatest influence on rewards and penalties. These KPIs and targets influence how the SAs allocate their limited resources in sanitation.

Table 2 shows the accountability authority and presence of KPIs, targets and separate budget line items for sanitation across the eight cities.

³ The most prominent scheme with a sanitation focus is the Swachh Bharat Abhiyan ('Clean India Mission'), which finances toilet construction across India as one of its primary interventions. The Atal Mission for Rejuvenation and Urban Transformation (AMRUT) also provides some funding that can be used for the construction of sewer networks and sewage or fecal sludge treatment plants. Both schemes are now starting a second phase after successful completion of phase 1.0.

⁴ Typically, the sanitation service chain includes these sequential stages: toilet access, containment, emptying (or collection, in the case of sewerage sanitation), transport, treatment, and reuse. The division of stages and terminology may vary across sources.

Table 2. Accountability mechanisms and priority setting

City	Accountability authority (both SS & NSS)			Performance indicators for service authorities set by			Progressive targets	Separate budget line items for sanitation
	State government	National ministry	National WATSAN regulator	State government	National ministry	National WATSAN regulator		
Wai	✓			✓	✓		(forthcoming)	✓
Narsapur	✓			✓	✓		(forthcoming)	✓
Warangal	✓			✓	✓		(forthcoming)	✓
Trichy	✓			✓	✓			
Khulna		✓			✓		✓	
Kampala		✓			✓		✓ ⁵	✓
Lusaka			✓			✓	✓	✓
Dakar		✓			✓		✓	✓

⁵Only for NWSC (sewered sanitation).

Service priorities in Indian cities

In the four Indian case study cities, sanitation service priorities and financing for these are heavily shaped by national level frameworks and schemes, as is the general case with cities across the country. State and city level initiatives build on national priorities set forth in central schemes such as the flagship Swachh Bharat Mission ('Clean India Mission', SBM), which allocates dedicated funding to states and cities.

The Finance Commissions, which are five-year national budget cycles, provide additional performance-linked financing tied to city achievements on nationally set KPIs. As the central government shifts its sanitation goals from ODF to ODF+/++, city priorities and financing also gradually transition from a heavy emphasis on toilet infrastructure to Faecal Sludge Treatment Plants (FSTPs) and emptying interventions. Nevertheless, the main part of sanitation financing remains focused on infrastructure construction.

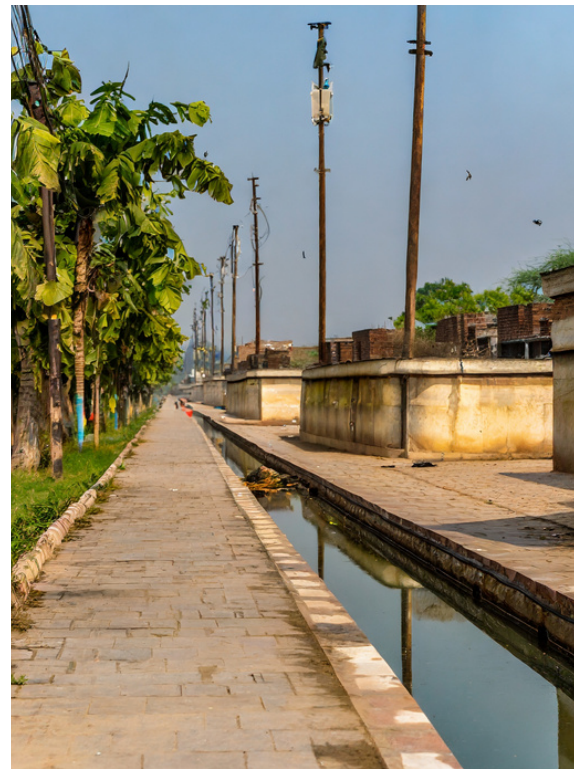


Photo illustrating urban sanitation in India.
Image generated on Adobe Firefly

In a big country like India, where there are 4,000+ urban local bodies, sanitation priority setting and performance management happen at two levels. First, the national-level ministry (Ministry of Housing and Urban Affairs, MoHUA) plays a major role in setting the overall direction for sanitation-related matters and KPIs used in urban areas. Second, the state government, which is the direct accountability authority for the city level SA, follows the guidance and evaluation framework set by MoHUA and may choose to include additional priorities and indicator areas for SA reporting within the state.

The framework for sanitation interventions and main sanitation priorities across the country are set through national schemes, which require data reporting from and provides funding support to states and cities. The most prominent scheme with a sanitation focus is the SBM, which finances toilet construction across India as one of its primary interventions alongside solid waste management. As the first phase of the project ended in 2020–21, the next phase plans to target faecal sludge emptying and greywater management, although the overall focus of the scheme is shifting from sanitation to solid waste management. Besides SBM, the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) also provides some funding that can be used for constructing sewer networks, household sewer connections, and sewage or faecal sludge treatment plants. Cities across the country report on a standard set of KPIs to their respective states, which then aggregate the data and report to the national ministry.

Similar to the case in other cities discussed in this paper, the sanitation KPIs required for national level reporting for SBM⁶ and AMRUT focus almost exclusively on infrastructure, with very limited emphasis on service levels. For these KPIs, state and city level targets are usually set at the beginning of the programme to contribute to a national target. The KPIs are reviewed annually and revised as needed, which also influence the targets set.

Besides programmatic efforts such as SBM and AMRUT with a fixed duration, there are also long-existing sanitation KPIs required for annual reporting from all Indian cities to MoHUA. The Service Level Benchmarks (SLBs) include service level indicators from toilet access to treatment. However, the associated benchmarks only set ideal aspirations for all cities (e.g. 100% coverage) instead of practical and progressive targets based on the realities in each city. Until the last five-year national budget cycle, funding allocation to the cities only requires reporting on the indicators and is not based on performance.

With recent developments at the national level linked to the 15th Finance Commission budget allocations, some cities have started setting targets for themselves on the SLBs, which can be changed annually based on discussions between the city government and the state level agencies, in order to avail the performance-linked funding. It is also worth noting that even though SLBs traditionally focus exclusively on SS, the 15th Finance Commission as well as recent schemes such as the SBM extend more support to NSS, in conformity with the country's reality of being largely non-sewered.

In the larger context set by national priorities, states may also choose to add their own priorities. For example, the SA in Warangal conducts periodic visits to all public toilets and reports on the toilet conditions into the State of Telangana's toilet monitoring system. The State Government of Maharashtra also released government resolutions directing cities to set targets for the coverage of individual household toilets and sustaining ODF status. The state allocates budget to the cities for the execution of these state level initiatives.

At the city level, priorities are further defined through the City Sanitation Plan (CSP), which evaluates existing service levels and gaps, and develops a strategy for improving sanitation service levels based on the city context. The SA is expected to use the CSP as guidance in planning its sanitation interventions and allocating its resources to achieving the long-term targets in the CSP. Nevertheless, the types of assessment done for CSP preparation and the level of detail in each CSP vary across cities. Under phase II of the SBM scheme, cities are now requested to develop City Sanitation Action Plans (CSAPs) which build on CSPs and propose concrete actions to advance service levels.

⁶This includes the indicators in the SBM MIS and the annual Swachh Survekshan ('Cleanliness Survey'), which is a national ranking survey started as part of the SBM.

Service priorities in other cities



Sewer networks in a Sub-Saharan African city.
Image generated on Adobe Firefly

Compared to the four Indian cities, other case study cities tend to prioritize SS over NSS due to different underlying institutional structures. Utility sanitation priorities are defined by the KPIs set by or agreed with national level authorities, which traditionally measure SS performance almost exclusively. While recent regulatory reforms have pushed for the inclusion of NSS KPIs and targets in Zambia, the legal and institutional barriers in other countries where the case study cities are located remain paramount. The split in sanitation mandate between SS and NSS service authorities in Kampala and Khulna poses further challenges, given the differences in regulatory and financing structures for utility (SA for SS) and city government (SA for NSS). The vast amount of sanitation financing, especially from government sources, is directed towards SS infrastructure across all four cities in this category.

For the SAs in other case study cities, their corresponding national level accountability authority is also the one setting KPIs and performance targets. For the African utilities that are SAs, their accountability authorities have set up performance evaluation systems with detailed KPIs and performance targets that define sanitation service priorities. Typical KPIs include service level indicators, such as (1) sanitation coverage of sewer connections, pit latrines and septic tanks, (2) operational indicators like the volume of wastewater treated and treatment efficiency, and (3) other financial and corporate management indicators, such as on cost recovery.

The utilities in Dakar, Lusaka and Kampala are all required to sign three-year performance contracts with national accountability authorities that include a set of specific targets every three years. While the KPIs are usually directly set by the national accountability authorities, the targets are discussed between the SAs and the accountability authorities and agreed upon before being drafted into the contracts. The targets are monitored and enforced with awards and penalties ranging from financial incentives for management and staff to tariff embargoes and cancellation of utility operating licences.

In Khulna, the SAs for SS⁷ and NSS sign Annual Performance Agreements (APAs) with the national accountability authority. Different from the African utilities, the SAs in Khulna can directly propose the KPIs to be used for performance tracking, in discussion with the accountability authority. The KPIs in APAs can also change more easily over time compared to their African counterparts, although most of the KPIs in APAs tend to remain the same from year to year.

Most of the sanitation KPIs and targets for these utilities only concern SS, reflecting the traditional focus on heavy infrastructure development, such as sewer networks and treatment plants. The vast majority of financial resources allocated for sanitation, from governmental and non-governmental sources, conform with this focus. National reforms are underway in Zambia to include indicators and performance targets on NSS in the evaluation system for utilities; the utility in Lusaka will be required to report achievement against these targets, once the regulatory reforms are complete. Lusaka has also seen more financing for NSS in recent years, owing partially to the national reform to explicitly include NSS in SA's mandates and performance evaluation systems.

On the other hand, in the two cities where the sanitation mandate is split between different SAs for SS and NSS – Khulna and Kampala – the SA for NSS (city government) lacks a comprehensive set of established KPIs and strong monitoring systems. Sanitation KPIs set for the city government in Kampala focus on activities instead of outcomes, and the city government in Khulna only has one sanitation-related KPI in its APA (% of faecal sludge produced in the city that is safely collected). The city government of Kampala developed the Kampala Sanitation Improvement and Financing Strategy in 2019, which includes performance targets to be achieved by 2030; the pathway for achieving these long-term targets and the monitoring framework is still under planning.

While the city government of Khulna does set progressive (i.e. annually increasing) targets for its one sanitation KPI on faecal sludge collection efficiency, there is no mention in any official document of consequences if APA targets are not met. The national accountability authority in Bangladesh publishes an annual report with selected indicators and data from all APA progress reports submitted by cities across the country. However, Khulna's only sanitation KPI has not been included in the national report for the past few years (since the indicator first appeared in APA). If the accountability authority's lack of interest continues, the city government of Khulna may even choose to drop this indicator in future APAs.

Sanitation financing situations in Khulna and Kampala further reflect the weaker focus on NSS – both cities have more resources dedicated to SS; except for external funding support, the budget for NSS is limited to a few established activities such as operational expenditures for the city government owned public toilets and desludging trucks. Within the city government of Kampala, for example, sanitation falls under the Directorate of Public Health and Environment and receives less than 5% of the Directorate's annual budget.

⁷The regional WATSAN utility, KWSA, only has KPIs on water supply at the moment. As the sewer network is under construction in Khulna, the related KPIs and targets will most likely be part of KWSA's APA once the sewers become operational.

Sources of finance for the service authority and funding gaps

Based on the service priorities set by national or state accountability authorities and the city level SAs themselves, SAs have several sources of finance for their sanitation interventions designed to meet the priorities. **The key question we examine in this section is:** *What are the sources of finance for sanitation service authorities, and are they enough?* Across the sanitation service chain, we find that stable government financing, especially transfers from higher level governments, is most prevalent for access and containment. Financing for treatment is heavily dependent on external sources (international financial institutions (IFIs) and donors) due to the substantial infrastructure Capital Expenditure (CAPEX) and often falls short of the population requirements in large cities. Emptying and transport sees the biggest funding gap, which reflects the weaker focus on this NSS segment from all sources.

Table 3 presents the finance sources across the eight cities for different segments of the sanitation service chain, including CAPEX and Operational Expenditure (OPEX). Government transfer here refers to transfers from higher level governments, such as the national or state government, either as part of annual budget allocations or for standalone programmes. SA’s own resources could include tariffs, taxes and fees.

SAs that are utilities only collect tariffs and fees, whereas city governments also collect taxes; further elaboration on utility and city government revenue sources is available in the next section.

As it is difficult to differentiate the exact sources of financing for a particular service chain segment among these three, tariffs, taxes and fees that form the SA’s own revenue are combined here.



City view in India.
Pexels/Sam Clickx

Among these different financing sources, financing from IFIs and donors, and NGOs and CBOs (except for routine CT and PT maintenance) is almost always project based and depends largely on the funder’s interest. Private sources listed in the table only concern Public–Private Partnerships (PPPs), as the market-based private sector activities are not related to SAs from a financing perspective.

Table 3. Financing sources across the sanitation service chain

Service chain	Financing sources	Wai	Narsapur	Warangal	Trichy	Khulna	Kampala	Lusaka	Dakar
Access & containment	Govt. transfer	✓	✓	✓	✓	✓	✓	✓	✓
	SA's own resources	✓	✓	✓	✓	✓		✓	
	IFIs & donors			✓		✓	✓	✓	✓
	NGOs & CBOs			✓	✓	✓	✓	✓	✓
	Private/ PPP			✓					
Emptying & transport	Govt. transfer	✓		✓	✓	✓	✓		
	SA's own resources	✓			✓	✓		✓	
	IFIs & donors						✓	✓	
	NGOs & CBOs						✓	✓	
	Private/ PPP	✓						✓	
Treatment	Govt. transfer			✓	✓		✓	✓	✓
	SA's own resources	(allocated) ⁸		✓	✓	✓	✓	✓	✓
	IFIs & donors	✓	✓	✓	✓	✓	✓	✓	✓
	NGOs & CBOs								✓
	Private/ PPP								✓

Across the service chain components, there are a few interesting funding patterns. Access and containment receives funding from government sources across all cities, especially for household toilets. IFIs and donors, and NGOs and CBOs are also supporting access and containment in a few cities, mostly for CAPEX financing of public and community toilets (PTs/CTs). While five out of the eight cities have some private sector involvement in PT and CT construction and management, only Warangal employs a PPP model (DBFOT – design, build, finance, operate, transfer) where the private sector builds and finances the PT and is expected to transfer it to the city government after the project period. The other cities either hand over the PTs and CTs built with government funds to the private sector for management, or have PTs entirely constructed and managed by the private sector without SA involvement.

Emptying and transport, on the other hand, is largely market based and dominated by profit-driven private sector players (except Khulna and Wai). Some of the SAs are also financially involved in the emptying market, mostly in the form of offering their own desludging services alongside private providers, but with a focus on institutions instead of households. While some budget is allocated in these cities for SA-owned desludging vehicles, the budget is usually only enough to cover operations and routine maintenance and does not allow the SA to undertake further interventions. Two of the SAs, in Wai and Lusaka, have gone one step further and used performance-based contracting with private operators for service provision.

Treatment is an area heavily funded by IFIs and donors, especially on CAPEX. For traditional sewers and wastewater treatment plants (WWTPs), central governments provide some funding, but seek the bulk of the funding from IFIs and donors in the form of concessional loans. With their limited resources, the local SAs are only able to finance the OPEX of the treatment infrastructure, including minor repairs. Large repairs and replacement usually require new projects funded by IFIs and donors or the central government.

Funding from IFIs and donors, and from NGOs and CBOs, are usually programme-linked and unsustainable; the only sources that can be counted on for the SA are government transfers and SA's own resources, although government transfers are often unpredictable in terms of timing. However, across the service chain segments, it is clear that only access and containment has been receiving stable funding from government transfers, supplemented by the SAs' own resources; financing for the other service chain segments suffer from higher volatility.

Both emptying and transport and treatment see major funding gaps. For emptying and transport, it is worth noting that the gaps should not be measured as a static difference between households' willingness to pay and the current costs of provision, which is a wide discrepancy in most cities. This discrepancy could be significantly reduced or even eliminated with structured and targeted SA interventions to organize the market, with the purpose of reaching economies of scale and increasing affordability.

⁸The Wai Municipal Council has allocated funding for the FSTP O&M, once the donor supported period ends and the plant is handed over to WMC.



Photo depicting desludging activities in India.
Image generated on Adobe Firefly

Several examples from the case study cities, such as Wai's scheduled desludging initiative and Kampala's community-based emptying, have demonstrated tremendous potential of reducing emptying costs, and correspondingly the prices.

To enable the realization of these types of market efficiencies, financing is required for the SA to regulate the private operators, raise awareness and aggregate household demand, and plan interventions that better match supply with demand as well as improve operational efficiencies in emptying. The scarcity of such funding is reflective of the lack of focus on NSS and on the emptying and transport service segment in the traditional service priorities defined by national and state level authorities.

On the other hand, the gap in treatment financing can be perceived more intuitively from the difference between current treatment capacity and the required capacity. Capacity requirement could range from the current wastewater and sludge collection volume at a minimum, to include the expected growth in demand from emptying interventions, to theoretical citywide generation based on the population, and finally to also consider projected population growth. While the amount of financing required could vary substantially based on the treatment technology used, the absolute gaps between current treatment capacity and required capacity remain significant in several cities.

Even considering the minimum requirement, most of the sewered cities (Kampala, Lusaka, Dakar, Trichy) still rely heavily on treatment infrastructure that dates back to several decades ago, with issues of overcapacity and aging facilities. The cities without SS, all in South Asia, lacked any treatment facility until the recent donor support for CAPEX and OPEX (for the first few years) to construct Fecal Sludge Treatment Plants (FSTPs). However, as the donor funded programme period ends, the SAs will need to take over the OPEX of these plants, with implications for additional financing requirements.

Nevertheless, the experiences with donor-funded FSTPs in Warangal and Narsapur have informed the decisions in their respective states to introduce a hybrid annuity PPP model covering CAPEX and ten years of operations and maintenance. The states of Andhra Pradesh and Telangana have already earmarked funding for these PPPs in over 70 cities and started the implementation. This points to one direction in which donor-funded programmes could be scaled up and become sustainable, through the involvement of higher-level authorities.

Service authorities' strategies for coping with funding gaps

Given the scarcity of sanitation financing compared to other municipal or utility services, SAs need to come up with ways to deal with funding gaps. Large CAPEX is funded by government transfers and/or loans and grants from IFIs and donors, hence major infrastructure constructions depend on the availability of such funding. Lack of CAPEX investment limits the types of services that SAs are able to provide, but the funding gap that is especially important for SAs in their daily operations is the OPEX gap, which impacts the continued provision of vital services. This section hence focuses on how SAs deal with OPEX funding gaps.

There are noticeable differences in coping strategies for SAs that are utilities and for those that are city governments. **The key question we seek to answer here is:** *How do service authorities deal with the funding gaps?* To understand how SAs deal with the funding gaps, it is important to know each SA's revenue sources and major sanitation-related costs, and how much freedom the SA has in budgeting for sanitation. **Table 4** below summarizes the similarities and differences for SAs that are utilities vs city governments, on key parameters, such as revenue sources, decision-making power in budgeting, challenges faced and methods for coping with OPEX funding gaps.

Table 4. Characteristics of utilities vs city governments as service authorities

	Utility	City government
Revenue sources	<ul style="list-style-type: none"> • Mostly tariffs and fees • Some supplement with govt transfers (% varies across cities) 	<ul style="list-style-type: none"> • Tax collection • Tariffs & fees • Govt transfers (some rely heavily on)
Decision-making power in budgeting	Varies, but high on average—budget formed based on own priorities discussed with national ministries, with more freedom in decisions regarding own revenue sources	Low on average—budget formed based on priorities set by national or state authorities, and needs to be approved by the state
Challenges faced	Insufficient revenue from sanitation services	Has traditionally played a limited role in sanitation service delivery (mostly focused on toilet access, till recently); How to deal with service expansion and taking over donor funded infrastructure
Methods for dealing with OPEX funding gaps	<ul style="list-style-type: none"> • Cross-subsidize with water revenue (for WATSAN utilities) • Forego routine maintenance to cut costs • Charge separate sanitation tariffs 	<ul style="list-style-type: none"> • Tax collection and user charges • Explore PPP options

Utility strategies

For utilities as well as for city governments across the case study cities, revenue from sanitation falls short of service provision costs, sometimes recovering only a fraction of the total. The most common strategy adopted by the utilities in these cities to cope with funding gaps is to cross-subsidize sanitation services with revenue from water supply. Some have also tried to forego routine maintenance to save costs, albeit with negative consequences in the long term. A more sustainable approach being rolled out by the national regulator in Zambia is to split water and sanitation accounts, so that sanitation services may be priced in ways that better reflect the true cost of provision. Nevertheless, this method does not apply for the utility in Dakar, which has sanitation as its sole line of business and resorted instead to PPPs.

Among the eight cities, the African SAs that are utilities (in Dakar, Lusaka and Kampala – SS only) rely on their own revenue sources, such as tariffs (water supply and sewerage tariffs) and fees (e.g., sewer connection fee, tipping fee at the treatment plants, licence fees for private emptiers, etc.) as their main source of financing. Their main sanitation-related costs are the OPEX of sewer networks and WWTPs. The WATSAN utilities in both Lusaka and Kampala are expected to be fully responsible for their own operations and finances for water supply and sanitation, with very limited support from the national government except in cases of emergencies⁹. These utilities also enjoy a high degree of autonomy in their own budgeting, with some flexibility in using surpluses or earmarked resources¹⁰ for new interventions. Most of their revenues are generated from service provision related to water supply, whereas the revenues from sanitation services often fall short of the cost of sanitation service provision.

In comparison, the utility in Dakar, which is only responsible for sanitation service provision¹¹, relies on central government transfers for more than 30% of its operations¹². Because of this dependency on national transfers, resources available to the SA in Dakar is less predictable. The amount received from the central government almost always falls short of the SA's requirement. In fiscal year 2019, for example, the SA only received 25% of its proposed budget requirement. Similar to its counterpart in Dakar, the utility in Khulna (SA for SS) also relies on central government transfers for part of its OPEX, and its budget is impacted by funding decisions at the national level.

In the larger context, utilities are expected to cover all or most of their OPEX; a common challenge faced by all these utilities is that revenue generated from their sanitation service provision falls short of covering service costs. A common approach that all WATSAN utilities have taken to mitigate the problem is to cross-subsidize sanitation services with revenue generated from water supply services. The utility in Lusaka has also reported foregoing routine maintenance to cover OPEX while revenue decreased and the budget gap widened during the COVID-19 pandemic. However, neither coping method addresses the root cause of the problem, and foregoing routine maintenance could cause much more detrimental effects in the long term.

⁹For example, the national utility in Uganda was able to tap into emergency funds during the initial periods of the COVID-19 pandemic, which caused disruptions to routine services.

¹⁰e.g., the utility in Lusaka is allowed, by the national WATSAN regulator, to collect a 2.5% sanitation surcharge on water bills as reserved funding for sanitation improvement projects.

¹¹In Senegal, water supply services are provided by a separate national utility.

¹²In fiscal year 2019, 65% of the SA's OPEX is covered by its own resources, with the remaining from central government transfers.

A more sustainable approach that the national regulator in Zambia is undertaking is to split the water and sanitation tariffs for all utilities in the country. Once the split is done, the utility in Lusaka will start implementing a separate sanitation tariff that reflects the true cost of service provision (i.e., increasing sanitation revenue). This will allow WATSAN services to operate with financial independence. On the other hand, the utility in Dakar tackled the problem from the cost side and leased out all FSTPs in the region to a consortium of private sector players in a PPP contract. This method leveraged private sector efficiency to effectively reduce OPEX and successfully turned the FSTPs from a loss for the utility to a profit.¹³

City government strategies

Given their wider range of revenue sources, city governments in the case study cities often use tax revenue from general municipal services towards covering sanitation service provision costs, which are limited in most of the cities due to the low priority traditionally occupied by sanitation. As these city governments increasingly shift their focus to sanitation, the rising costs are being met through dedicated sanitation taxes and various PPP models.

The SAs that are city governments have more diversified revenue sources from their various activities covering all aspects of municipal services. In India, a typical city government has the following sources of revenue: assigned revenue (e.g., profession tax, entertainment tax, motor vehicle tax etc.); own revenue (e.g. water charges, property tax, vacant land tax, other user charges etc.); and grants (e.g. planned transfers from state and central governments, under various projects, programmes and schemes). Typically, the assigned and own revenues go towards covering OPEX while the grants are used for CAPEX.

A significant difference between city governments and utilities is that city governments can collect taxes. The biggest revenue source for most city governments is property tax, whereas sanitation related revenue (mostly a sanitation tax collected as a percentage of water bills, marginally supplemented with fees such as treatment plant tipping fees) constitutes a very small part of assigned and own revenue. The city governments in Khulna and Kampala have similar types of municipal revenue sources as their counterparts in India, but do not collect any sanitation tax, implying that their sanitation revenues are significantly lower.

Except for the SA in Trichy, sanitation costs are also very low for SAs that are city governments. Sanitation service provision by the SAs in Warangal, Narsapur, Wai and Khulna has traditionally focused on toilet access but has been limited in other service chain segments. In recent years, the SA in Wai started scheduled desludging, and the city government in Khulna began offering on demand desludging services. Both of these strategies are low in cost. Hence, the insignificant budget gap between sanitation revenue and service costs can be covered using the surplus from other municipal revenue sources.

¹³ More details on the FSTP PPP model in Dakar is available in another brief of the CWIS Learning Brief Series.

On the other hand, the city government in Kampala relies almost exclusively on government transfers for all of its activities. Most of the revenue it collects is required for submission to the central government and then remitted based on national level decisions. The amount remitted may be higher or lower than the amount submitted, but is usually lower and often falls short of the proposed budget requirement by the city government.

Since city governments are responsible for providing a wide range of municipal services, their budgets need to be allocated across many different categories, among which sanitation had traditionally occupied a low priority until national level schemes such as SBM started less than a decade ago.

The even lower revenues from and cost recovery of their sanitation activities, as compared to SAs that are utilities, imply that any new projects and service expansions on the limited services currently being offered often rely on grants and transfers from higher level governments, which are usually tied to national or state schemes related to sanitation or based on specified criteria that city governments need to meet.¹⁴ As these city governments become more involved in sanitation service provision, the budget gap will increase, requiring additional resources.

One approach to address the funding gap that the city government of Wai has piloted is to start collecting a sanitation tax. This has allowed the city government to implement scheduled desludging for the entire city since 2018, which is a major service expansion from the previous on demand desludging. Nevertheless, the tax amount (<\$1 USD) was set at a low level due to affordability and political considerations, and is insufficient to cover the cost of the scheduled desludging service.

The city government has been covering the gap through its revenue surplus from property tax, and plans to convert the flat tax to a proportion of property tax to improve cost recovery while benefiting the poor.

Besides tax collection, several city governments have also actively used PPPs to provide services without requiring substantial government funding. For example, the city government of Khulna leases out its PTs to private operators, who charge user fees to cover operations and maintenance and also pay a small monthly lease fee to the government. In Warangal, 40+ PTs are under a DBFOT PPP, where the city government takes a supervisory role without any financial obligations in the construction or operations and maintenance. The cities with donor-funded FSTPs are also planning to engage the private sector for managing the FSTPs once the donor-funded programme period ends.

It is worth highlighting that both Kampala and Khulna's sanitation mandates are split between two SAs for SS and NSS. The SA for NSS (city government) has significantly less resources than its counterpart for SS (utility) and a harder time coping with funding gaps. Since the resources cannot be as easily redistributed as in other cities where a single SA manages SS and NSS, this mandate split has resulted in even heavier resource concentration on SS service provision which benefits the privileged few with sewer access, and further disadvantages the vast majority of poor households that rely on NSS.

¹⁴For example, to access the central government's 15th Finance Commission grants, city governments in India will have to submit year wise targets for Service Level Benchmarks and gap analysis and identification of projects for achieving (i) garbage free star rating and (ii) coverage of water supply for HH, PTs, CTs.

Pro-poor resource allocation

Within the resources allocated for sanitation, we turn to those resources allocated for pro-poor service delivery. Here, we do not seek to judge the adequacy of pro-poor resource allocation, as this may be highly subjective and dependent on the context.

The key questions we seek to answer in this section are: *Are there dedicated resources for service delivery to the poor, and are they sustainable?* We find that even though all eight cities are implementing pro-poor initiatives, only two of them have a clear pro-poor mandate and three have pro-poor performance indicators. Weak accountability and meagre funding for pro-poor initiatives at the national level underlie the limited or unclear city level performance on service delivery to the poor and pose serious questions to the sustainability of current pro-poor interventions once donor-funded programmes end in several of the cities.

Similar to overall financing for sanitation, pro-poor resource allocation cannot be viewed independently as it is closely linked to the scope of pro-poor sanitation mandate and targets. Having a pro-poor sanitation mandate means that the SA is specifically required to ensure adequate sanitation service delivery for the poor and to dedicate resources for the purpose, laid out in the legal, regulatory, or policy documents that define the SA's responsibilities.

This goes a step beyond the broadly defined sanitation mandate of ensuring service delivery for everyone, which is a more common phrase used. It is also more specific than general municipal pro-poor mandate and resource allocation, where sanitation often gets lost as one of the last priorities.

Sanitation interventions that do not specifically target the poor often have unequal effects on the poor and non-poor households, as the poor face other barriers (e.g., location and accessibility, land title, etc.) that prevent them from benefiting from the services. Having an explicit pro-poor sanitation mandate is critical since the poor suffer the most from inadequate sanitation service provision and require more resources to enjoy the same level of service as other households.

Table 5 summarizes the existence of pro-poor mandate, targets, initiatives and funding sources for the initiatives.



A street on the island of Gorée, off the coast of Dakar, Senegal.
Unsplash/Vince Gx

Table 5. Pro-poor mandate, targets, initiatives, and funding sources

City	Has explicit pro-poor mandate	Has pro-poor performance indicators	SA has undertaken pro-poor initiatives	Funding sources for pro-poor interventions (sanitation specific)
Khulna			✓	National transfer Donor
Wai		✓	✓	Own budget
Narsapur		✓	✓	State transfer Own budget
Warangal	✓	✓	✓	State transfer Own budget
Trichy			✓	State transfer
Kampala			✓	Donor (KCCA) Own budget (NWSC)
Lusaka	✓		✓	Donor Own budget (via nationally set-up mechanism)
Dakar (region)			✓	Donor

Among the SAs in all eight cities, only those in Lusaka and Warangal have an explicit pro-poor mandate. In Lusaka, the mandate is defined in national level policy documents which specify WATSAN service provision in ‘peri-urban areas’, a term for urban informal settlements. In Warangal, the 2019 revised Telangana Municipalities Act specifies earmarking the budget for critical infrastructure construction – including sanitation – in slums. Warangal, Narsapur and Wai have state level pro-poor indicators but no associated performance targets, as is the case with sanitation performance indicators in India. While the cities mentioned here are providing services in slums by themselves, the lack of explicit mandate means that other cities in the country may not see it as a priority or have the resources to do so.

Corresponding to the lack of explicit mandate for reaching the poor and targets for service delivery to the poor, resources for pro-poor sanitation initiatives are also limited at the national and state levels. While there are additional national schemes in India with a sanitation focus (SBM and AMRUT), these have a broader reach and are not explicitly designed for the poor. General pro-poor funding is available for the Indian cities through the central government Basic Services for Urban Poor scheme and for Khulna through the Ministry of Local Government’s Livelihoods Improvement of Urban Poor Communities Project. Both projects include components on improving sanitation facilities, among other general infrastructure interventions in low-income countries.

However, for these types of programme-linked funding, the portion that is allocated or can be used for sanitation depends on the approval of specific projects and activities, with high unpredictability of funding level and future continuity. Warangal and Narsapur enjoy additional sanitation financing support from a parastatal¹⁵ dedicated to urban poverty alleviation in their respective states.

Meanwhile, Lusaka benefits from a different mechanism where the national WATSAN regulator has established a 'sanitation surcharge'. The national WATSAN regulator needs to approve all utility charges to customers to ensure that the services are affordable, hence utility revenue is limited. Utilities with high cost recovery rates may be given special permission to collect a fixed percentage (up to 5%, usually approved at 2.5%) of the water bills as sanitation surcharge, and the revenue collected from the sanitation surcharge is ring-fenced for only approved sanitation extension projects targeting the poor in the areas of its jurisdiction, including the peri-urban areas.

At the city level, all service authorities are implementing and allocating finances for pro-poor initiatives from their own resources and donor funding. Some cities set aside funding, either by requirement or out of their own initiatives, for general pro-poor initiatives that include sanitation. Wai and Trichy have a dedicated budget for improving overall service delivery for the poor. Similarly for Warangal, state law obligates a third of the balance budget to be earmarked for critical infrastructure requirements for the poor. While data might be present on the share of sanitation in the budget and its utilization, such data is not readily available and will need to be analysed.

On the other hand, Narsapur, Wai and Khulna have allocated resources for specific sanitation activities with a focus on the poor. Narsapur has piloted a pro-poor emptying subsidy and is in the process of scaling it up to the entire city, with a dedicated budget. Wai has been implementing a flat sanitation tax which is designed to be affordable for all households, and is planning to turn this into a progressive tax as a percentage of property tax. In previous years, Khulna has also allocated funding from its own budget for slum improvement projects that focus on sanitation, although there is no fixed share of pro-poor budget, and the continuity of the allocation is unclear. Donor support also constitutes a significant share of the pro-poor financing for Khulna, but less than for Dakar and Kampala, where almost all pro-poor sanitation initiatives are being financed by donors.

It is also worth noting that for Kampala, the split in sanitation mandate between SS and NSS has created additional challenges for serving the poor. The WATSAN utility in Kampala, National Water and Sewerage Corporation (NWSC), has a clear pro-poor mandate and a pro-poor unit that actively serves low-income countries. However, most of NWSC's pro-poor interventions are on water supply except for a few PTs built as part of its Corporate Social Responsibility (CSR) efforts, since NWSC is only responsible for SS which is accessible to the privileged minority. On the other hand, the service authority for non-sewered sanitation, KCCA, has very limited resources at its disposal for sanitation interventions that can reach the poor, the vast majority of whom rely on pit latrines.

¹⁵ Mission for Elimination of Poverty in Municipal Areas (MEPMA).

Lusaka is the only case where, besides donor funding, a fixed budget is earmarked for sanitation improvement for the poor, owing to the national mechanism of sanitation surcharge. This means that even as the donor-funded sanitation programmes come to an end in Lusaka, the SA will be able to draw on the sanitation surcharge to continue funding key pro-poor programmes. The national regulator has approved for the SA to use the 2.5% sanitation surcharge to continue upgrading unsafe pit latrines after donor support for the programme ends.

Across the eight cities, the inadequacy of resource allocation for pro-poor service delivery especially at the national and state levels reflects an underlying lack of clear national level strategies on sanitation service delivery for the poor, gaps in the mandate of sanitation service authorities as defined in legal and policy documents and weak accountability for service delivery outcomes for the poor.

Even in the cases where higher-level governments have allocated some resources for pro-poor service delivery, the utilization of such funds and the actual outcomes achieved are often unclear due to the absence of clear targets, monitoring and enforcement. As national and state level authorities consider bridging the gap on pro-poor funding, it is equally critical to accompany such resource allocation with reforms to make service authority mandate more comprehensive and to strengthen accountability with a set of practical and progressive targets that are monitored and enforced.

Service authority approaches to financial planning



A view of the Mutha River in India.
Pixabay/Mahavir Sanglikar

Based on the understanding of the types of financial resources available to SAs, we look at how the SAs are using the resources available to them.

The key questions are:

What approaches are service authorities using for tracking and planning for financing?

Do these approaches offer sufficient insights into their financial health?

Table 6 below summarizes some of the key attributes of the SAs’ financial planning approaches.

The analysis reveals gaps in the rigour of cost budgeting and calculations, as well as granularity of accounting methods for better financial planning.

Table 6. Service authority financial planning approaches

Type of SA	City	SA's cost budgeting based on	Cost calculation includes depreciation	SA evaluates between different investment options
Utility	Dakar	Historical data	✓	✓
	Lusaka	Historical data	✓	
	Kampala (SS)	Historical data	✓	✓
	Khulna (SS)	Historical data	✓	✓
City Government	Wai	State's official Schedule of Rates		✓
	Narsapur	State's official Schedule of Rates	(only for PPP projects)	✓
	Warangal	State's official Schedule of Rates	(only for PPP projects)	✓
	Trichy	State's official Schedule of Rates		
	Kampala (NSS)	Assumptions		✓
	Khulna (NSS)	Assumptions		✓

A clear dichotomy is visible on the basis of cost budgeting between SAs that are utilities vs SAs that are city governments. All utilities use historical data in their cost budgeting, whereas city governments either follow the standard Schedule of Rates published by their respective state governments (in the case of Indian cities) or rely on their own assumptions and estimates. The utilities also calculate depreciation as a standard part of their budget, whereas city governments have included depreciation mostly only in individual projects (e.g., FSTPs), often supported by IFIs and donors.

Even though most SAs' budgets do include minor repairs, many SAs do not have major replacement and repair costs in their budget. For Indian cities that are non-sewered, major replacement and repair costs for municipality owned assets (e.g., PT and CTs, vacuum trucks) can be accommodated ad hoc through their water and sanitation budgets. However, other city governments and utilities struggle to find the resources, especially those operating sewer networks and WWTPs that require substantial cost, which is often beyond their financial capacity and requires new projects funded by government transfers and/or IFI and donor support.

While most of the SAs evaluate between different options for new investments (e.g., centralized sewers, decentralized sewers, onsite systems, etc.), all cities have experienced challenges in implementing their decisions. This is due to the heavy dependence of these investments on external funding, the final choice of sanitation technology almost always depends on the interest of the main funder (IFI or donor), even if it is not aligned with the local SA's preference.

In financial planning, the availability of detailed data for financial analysis is key for ensuring accountability. To diagnose the biggest causes of an SA's financial issues and identify potential mitigation measures, there should be trackable data on how much is generated and spent on what. However, the planning approaches adopted in most of these cities do not generate sufficiently detailed data for key financial insights such as cost recovery by service and/or asset category.

For example, the SA in Dakar has its budget organized around large programmes with many different components, which are highly aggregated. The SA in Lusaka has more detailed budgeting, but activities associated with different types of services and operations are still grouped together under aggregate line items like salary, electricity, fuel and chemicals. In these cases, it is difficult to disaggregate the data (e.g., by asset category of WWTP, FSTP, desludging vehicle) to identify where the SA has the largest deficits and how big the gaps are.

The only SAs for which cost recovery by asset category can be calculated are the three NSS cities in India (Wai, Warangal, Narsapur), due to their having few sanitation revenue sources and expenditure items. As SAs expand their services and have more complicated revenue and cost structures, better financial planning methods are needed to generate detailed data for financial analysis.

Implications and recommendations

The experiences across these eight cities suggest that sanitation financing is heavily influenced by service priorities set through nationally defined KPIs, which reflect the sanitation mandate for service authorities as defined through legal and regulatory instruments. However, there is often ambiguity in these instruments around the responsibility for each segment of the sanitation service chain.

Lack of explicit legal language around NSS and responsibilities along the full sanitation service chain cause gaps in the accountability and financing frameworks, which in turn undermine city level service delivery, especially in places where sanitation mandate is split for SS and NSS. To improve financing for these gap areas, reforms need to start at the national level on clarifying mandate, completing accountability frameworks especially for NSS, and allocating funding based on the revised set of priorities. These reforms will create an enabling environment for city level service improvement interventions.

Across the case study cities, national and state level changes are happening in a few places, such as the regulatory reforms led by the national sectoral regulator in Zambia and the move towards ODF+/++ led by the national sectoral ministry in India. Looking forward, these eight cities aim to improve their available financing through a variety of approaches. In Kampala, both SAs aim to continue to improve the use and management of funds, increasing overall financing via efficiency gains. Similarly, the utility in Dakar aims to improve the rigour of its sanitation monitoring systems and further advance existing PPPs.

Lusaka aims to fund more projects via sanitation surcharges, more cost reflective sanitation fees and tariffs, and to make the sanitation sector more attractive to private businesses. Meanwhile, Warangal has implemented PPPs for public toilets, and the SAs in South Asia are actively exploring PPP options as they are expecting to take over the donor funded FSTPs, and some are considering collecting additional taxes and fees to expand service provision into areas such as scheduled desludging. A few cities are also exploring CSR funding and impact investing options for smaller projects.

Based on the learnings from these eight cities, we draw the following set of recommendations to improve sanitation financing for three main stakeholder groups that have significant influence on the system: national and state level authorities, city service authorities, and IFIs and donors.

➤ **Recommendations for national and state level authorities:**

- Review legal and regulatory instruments that define the sanitation mandate for service authorities to ensure that: 1) language related to NSS is explicitly included in the definition of ‘sanitation’; 2) the entire sanitation service chain is well defined and covered, especially segments that are often neglected, such as containment (e.g., containment standards, inspection and enforcement), and emptying and transport.
- Policy documents on sanitation (either standalone or as part of broader documents that also cover water, health, environment, etc.) have a clear and explicit pro-poor focus, with budget allocation for pro-poor sanitation interventions.
- Form clear KPIs for sanitation, covering NSS, the entire sanitation service chain, and pro-poor performance indicators, with clear targets and monitoring and enforcement mechanisms for city level reporting. In cases where sanitation mandate is split for SS and NSS at the city level, accountability mechanisms should be reviewed and strengthened for both SS and NSS service authorities.
- Allocate more funding for the emptying and transport segment of the sanitation service chain, especially for interventions that could help restructure markets for efficiencies, such as through demand aggregation and optimization of demand and supply matching, based on the regulation and engagement of private operators.

➤ **Recommendations for city service authorities (utilities and city governments):**

- Review and revise current sanitation tariffs and fees (in collaboration with higher level accountability authorities) to improve financial sustainability of sanitation services, with a pro-poor consideration. For example, sanitation tariffs and fees could be progressive and designed based on the ability to pay of different population groups, with partial revenue ring-fenced sanitation service improvement interventions for the poor.
- Review current financial planning methods and adopt more rigorous approaches for better financial decision-making, such as the inclusion of depreciation in costing, double-entry accrual-based accounting, evaluation of different technology options in investment decision-making, etc.
- Allocate budget for the OPEX of donor funded infrastructure projects (e.g., treatment plants) to ensure the continued functioning of critical infrastructure, and explore innovative management models to save costs, such as involving the private sector.
- Explore PPPs in various segments of the sanitation service chain to ‘do more with less’ and learn from good practices elsewhere.

➤ **Recommendations for IFIs and donors:**

- Support national and state level authorities in making aforementioned legal and regulatory changes around sanitation.
- Fund pilot projects that could demonstrate effective modalities of organizing the market and improving service delivery cost-effectiveness, and support governments to scale up successful interventions.

Conclusion

Across the eight cities, we observe common financing patterns such as a traditional focus on treatment infrastructure and toilet access, with financing for other segments of the service chain starting to increase over the past 5–10 years. The only service chain segment that receives stable funding across the board from government transfers is toilet access and containment; treatment infrastructure is capital intensive and short of the minimum capacity requirement in most big cities of the cohort; emptying and transport receives the lowest funding of all service chain segments and largely relies on funding from IFIs and donors. This exacerbates service delivery inequality, as the poor in these cities rely heavily on NSS. These financing patterns are influenced by the sanitation service priorities shaped by service authority KPIs established at the national level, which reflect the gaps in sanitation mandate as defined in legal and regulatory instruments. The challenge is particularly severe in cities where sanitation mandate is split for SS and NSS; NSS service authorities receive only a fragment of the sanitation financing available to SS service authorities.

Key differences emerge between service authorities that are utilities or city governments on their financing sources and methods for coping with financing gaps. City governments have more financing sources (taxes) and more competing priorities of other municipal services, among which sanitation had traditionally occupied a low place on the priority list until recent national and local initiatives over the past few years. As city governments start offering more sanitation services, additional resources will be required to bridge the widening financing gaps. One way that has proved effective for both city governments and utilities is engaging the private sector through PPPs to improve operating efficiency and cut costs while expanding the scope of service.

These innovations with financing approaches, however, happen within larger frameworks of sanitation mandate and accountability systems. Without a clear sanitation mandate and service priorities that reflect the city's true needs and are reinforced with accountability mechanisms, cities will face much larger challenges in resource allocation that disadvantage the poor, as in the cases of Kampala and Khulna, where sanitation mandate is split between different service authorities for SS and NSS.

To address these challenges, reforms need to start from the national level with reviews of sanitation legal and regulatory instruments, completion of accountability frameworks with NSS and pro-poor aspects, and budget allocation for sanitation, especially for innovative models that organize the market and improve service delivery equity and efficiency.

References and further reading

Andhra Pradesh Municipalities Act (1965).

Annamraju, S., Calaguas, B., & Gutierrez, E. (2001). *Financing water and sanitation: Key issues in increasing resources to the sector*. OECD.

Décret n° 2019-786 du 17 avril 2019, relatif aux attributions du Ministre de l'Eau et de l'Assainissement (2019).

Department of Expenditure, Government of India. (2017). Guidelines for Local Body Grants recommended by the Fourteenth Finance Commission.

Kampala Capital City Act (2010).

Kampala Sanitation Improvement and Financing Strategy (2019).

Kampala Sewage and Faecal Sludge Management Ordinance (2019).

The Local Government Act, Chapter 281 of the Laws of Zambia (1991).

The Local Government (City Corporation) Act, Laws of Bangladesh (2009).

Local Government Division, People's Republic of Bangladesh. (2017). Institutional and Regulatory Framework for Faecal Sludge Management.

Loi n° 96-02 autorisant la création de l'Office national de l'Assainissement du Sénégal (1996).

Loi n° 2008-59 portant organisation du service public de l'eau potable et de l'assainissement collectif des eaux usées domestiques (2008).

Loi n° 2009-24 du 8 juillet 2009 portant Code de l'Assainissement (2009).

Maharashtra Municipal Councils and Nagar Panchayats and Industrial Townships Act (1965).

Mehta, M., & Knapp, A. (2004). *The Challenge of Financing Sanitation for Meeting the Millennium Development Goals*. Water and Sanitation Program, Africa.

Ministry of Housing and Urban Affairs, Government of India. (2017). ODF Toolkit.

Ministry of Housing and Urban Affairs, Government of India. (2018). ODF+/++ Toolkit.

Ministry of Urban Development, Government of India. (2010). Handbook of Service Level Benchmarking.

National Water and Sewerage Corporation Act of Uganda (1995).

References and further reading

- Operative Guidelines for Septage Management for Local Bodies in Tamil Nadu (2014).
- Operative Guidelines on Septage Management (Collection, Transportation, Treatment and Disposal) in Greater Warangal Municipal Corporation (2016).
- The Public Health Act, Chapter 295 of the Laws of Zambia (1995).
- The Public Health Act of the Republic of Uganda, Chapter 281 (1935).
- Public Health Guidelines for Faecal Sludge Management: Minimum Standards for Sanitation, and Occupational Health and Safety in Kampala City (2019).
- Tamil Nadu District Municipalities Act (1920).
- Telangana Municipalities Act (2019).
- Trichy City Corporation Act (1994).
- Rees, J. A., Winpenny, J., & Hall, A. W. (2008). *Water Financing and Governance*. Global Water Partnership.
- Republic of Zambia. (2010). National Water Policy.
- Uganda Local Governments Act, Chapter 243 (1997).
- The Water Supply and Sanitation Act, Government of Zambia Act No.28 of 1997 (1997).
- Trémolet, S., Kolsky, P., & Perez, E. (2010). *Financing On-Site Sanitation for the Poor: A Six Country Comparative Review and Analysis*. World Bank.
- Water Supply and Sewerage Authority (WASA) Act, Laws of Bangladesh (1996).

About the IWA Inclusive Urban Sanitation Initiative

The initiative responds to a huge and growing public need – safe sanitation in combination with access to safe drinking water and hygiene underpins good health. The aim of this initiative is reshaping the global urban sanitation agenda by focusing on inclusive sanitation service goals and the service systems required to achieve them - rather than the traditional singular focus on expanding sewer networks and treatment works. This forms part of IWA's larger agenda to promote inclusive, resilient, water-wise, and sanitation-secure cities. This initiative is being progressed through a dedicated campaign **#SanitAction** to garner support and collaborative action.

About the Inclusive Urban Sanitation Discussion Papers

The initiative aims to produce a series of publications – books, position papers, and discussion papers. The discussion papers present analyses and findings from research and/or reports of projects, and programmes of the sanitation sector to instigate discussion among the sanitation community.



INTERNATIONAL WATER ASSOCIATION

Export Building, 1st Floor
1 Clove Crescent
London E14 2BA
United Kingdom
Tel: +44 207 654 5500
E-mail: water@iwahq.org

Company registered in England No.3597005
Registered Charity in England No.1076690

www.iwa-network.org

